SEPARATE SUBSIDIARIES AND STRUCTURAL SEPARATION IN UNITED STATES TELECOMMUNICATIONS: CONCEPTUAL ANALYSIS, APPLICATIONS, AND PROGNOSIS

Prepared for the

Ministry of Transportation and Communications
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by

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INTRODUCTION AND SUMMARY

A. General

This study was undertaken by Bethesda Research Institute as an independent project, commissioned by the Ministry of Transportation and Communications of the Province of Ontario. It is intended to aid the Ministry in the filing of comments regarding the Canadian Radio-television and Telecommunications Commission's (CRTC) Telecom Public Notice 1984-66 (9 November 1984). The CRTC's Notice concerns the feasibility of implementing structural separation respecting the multiline and data terminal equipment businesses of federally regulated telecommunications carriers, such as Bell Canada and British Columbia Telephone Company.

The report focuses upon analysis of past United States' separate subsidiary proposals and actual applications, in the hope that this examination of U.S. experience, especially in light of unfolding events, will provide useful insights. However, the Institute recognizes that the structural separation approach is very sensitive to market, institutional, and social factors or the particular setting in which it is applied. As a result, this study does not attempt to evaluate the separation alternative's merits as a possible "best option" in the context of the CRTC's investigation. Nor is it directed toward

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evaluating separation of these carriers' terminal equipment businesses as a specific issue for investigation.

There are three major sections of the report. These deal with theoretical and practical aspects of structural separation, including, inter alia, the conceptual foundation of the separate subsidiary option; FCC, Court, and Congressional views respecting use of this alternative, and an evaluation of the efficacy of structural separation in the light of forecast industry evolution through the balance of this decade.

In pursuing study objectives, various professional and industry literature, publicly available sources, and original analyses were used. Contact was maintained with Ministry personnel during the course of the study, and appreciation is expressed for the Ministry's logistical and related support. However, all analyses, writings, and other study materials were developed separately. These, and any views or interpretations expressed in this monograph are strictly those of the Institute and are its sole responsibility.

Throughout the discussion, the Institute has attempted to maintain an independent or nonpartisan perspective. Where (overall) evaluations of the efficacy of the separate subsidiary approach are required, assessments are made from the standpoint of generally accepted U.S. public policy goals. These include promotion of technological innovation, competition, economic efficiency, and universal telephone service.

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B. Conceptual Views of Separate Subsidiaries and Applications

From a theoretical perspective, it is possible to conceive of a continuum of alternative forms or progressions of regulatory separation. These include options that are more oriented toward accounting or transactional based devices, those that emphasize organizational or structural requirements, and, ultimately, divestiture. In theory, as policy makers require further progressions away from totally integrated carrier operations, the amount of regulatory oversight needed to assure that monopolistic areas of a dominant firm's operations are not used to cross subsidize other sectors will lessen.

Many of the permutations of separation that can be envisioned conceptually have had actual application in the United States at either the federal or state level. Attempts to split or disaggregate common carrier operations have become necessary, at least as transitional devices, due to a fundamental shift in governmental policy. Starting in the late 1950s, there has been a gradual change in policies of the Federal Communications Commission (FCC) (and national policy) toward introducing competition and relying on market forces in erstwhile monopoly dominated industries. As a result, there has been a need to separate emerging competitive areas of telecommunications, especially terminal equipment supply and long distance carriage, from bottleneck local exchange operations.

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In moving along this path toward greater competition, the FCC implemented various means of dividing competitive and monopoly markets. Most of these efforts were directed toward AT&T or the Bell System. However, some degree of separation was also applied to other firms, such as the Independent telephone companies (e.g., General Telephone and Electronics) and satellite carriers (e.g., Satellite Business Systems). The impetus toward separation of competitive and monopoly markets also necessitated division of regulated communications services from allied data processing or information offerings. Indeed, in the 1960s, in the context of its Computer Inquiry I investigation, the Commission initiated efforts to constrain the breadth of its regulatory jurisdiction in order to avoid "chilling" market forces in the face of possible governmental interference.

By the early 1980s, several of the more rigorous separation alternatives had been applied. In addition, regulatory forebearance or "deregulation" had emerged as a major tool in the FCC's efforts to foster greater application of market pressures. For instance, in its Computer Inquiry II decision, the Commission deregulated the customer premises equipment and enhanced services offerings of AT&T and the other telephone carriers. However, AT&T was only permitted to provide these offerings through structurally separate organizations that had separate books of account, officers, facilities, and work forces. Later, following the 1982 divestiture, many of these requirements were applied to the spun-off Bell Operating Companies (BOCs) by both the

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FCC and Judge Harold Greene (who presided over the consent decree entered into by AT&T and the Department of Justice).

More recently, the FCC has begun to relax full application of its Computer Inquiry II separation requirements to the BOCs' new customer premises equipment (CPE) operations. It has also initiated an investigation into removing application of structural safeguards entirely from AT&T, at least in the area of customer premises equipment. Finally, the Commission is currently considering waiver applications of the BOCs, which would remove prohibitions on supply of competitive and monopoly services from common (regulated) local facilities.

In short, over the space of little more than a decade, the FCC has moved across the spectrum of separation alternatives. In the face of a constantly changing industry structure, it has traveled the road from the "least stringent" accounting oriented requirements to the "most severe" structural separation options, and, at present, seems intent on proceeding back toward those approaches oriented toward a minimal degree of organizational separation.

The future course of telecommunications evolution promises to also be accompanied by a volatile or changing industry structure. Notably, reintegration of supply appears to be occurring. This may result in a much greater availability of "end-to-end" supply options for users than has been the case in the past. In addition, new bypass and other suppliers are appearing in greater numbers. Should these developments continue, by the

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end of the decade it seems certain that the BOCs will be released from restrictions on the markets that they serve in order to permit these companies to compete on a "level playing field." Finally, it is likely that a carriers' carrier supply tier will emerge, which will have competitive dynamics that are quite different from those of conventional long distance, local or equipment supply. These dramatically different conditions may call for an entirely new matrix of policy tools.

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C. U.S. Experience in Retrospect

Given U.S. telecommunications experience of the last twenty five years, it appears clear that continued evolution of telecommunications markets will adversely impact even the "best" policy choices that can be made at a given point in time. For instance, divestiture of the BOCs in 1984 provides an obvious example of a change that severely unbalanced the prevailing (Computer Inquiry II) regulatory paradigm. But even without that dramatic shock to the industry's measured transition toward competition, it still seems certain that governmental policy would have had to continue to make major adjustments to accommodate evolving market trends. In short, it can be concluded that there is no "one best" policy approach, at least when one is dealing with an evolving industry structure. In consequence, regulators cannot expect to avoid their monitoring responsibilities through the use of structural separation, divestiture, or other devices.

In addition, the unfolding of recent events indicates that combinations of policy options and full recognition of the incentives fostered by a particular alternative have special importance. For instance, use of unsupervised structural separation, without concomitant oversight of transactions and audits, is likely to deteriorate to a condition where the structural separation is merely a sham. Separated entities will recognize where the interests of the parent lie and favor the overall firm's objectives "if left unattended." In this regard, the device of

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outside (minority) ownership is often proffered as a means of creating proper incentives.

Finally, given the importance of adjusting governmental policies to emerging industry structure, it may be well to consider imposing structural separation or other conditions on an anticipatory, rather than reactive, basis. For instance, in the United States it appears that only bottleneck local exchange services will remain subject to monopoly supply conditions over the long run. With that in mind, it may be less than judicious to stress application of structural requirements that attempt to "box out" or separate the growing competitive sector or inhibit carrier pricing flexibility in these markets.[1]

Instead, the policy focus could be turned toward developing conditions that separate out captive basic local exchange services and prevent the bottleneck service supplier from using funds generated by monopoly customers for competitive or diversification ventures. This approach would eliminate cross subsidization from monopoly services, but would also permit the bottleneck supplier to price its competitive services to meet the pressures of bypass or other new service suppliers. In this regard, the separation algorithms contained in H.R. 5158 may provide an instructive example.

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[1]See W. Bolter, "Restructuring in Telecommunications and Regulatory Adjustment," Public Utilities Fortnightly, July 5, 1984, pp. 21-22.

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SECTION I

THEORY AND PRACTICE OF STRUCTURAL REGULATION

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SECTION I

THEORY AND PRACTICE OF STRUCTURAL REGULATION

Over the last several decades, the Federal Communications Commission (FCC) has recognized that the regulation of dominant carriers using the conventional tools of rate-of-return-rate base regulation has become increasingly unworkable and ineffective in meeting its regulatory goals.[1] As a result, the FCC has modified its regulatory tools in fundamental ways to reflect the changing structure of the contemporary telecommunications industry. This section of the report examines these important changes in regulatory theory and practice and provides some assessment of the effectiveness of the new regulatory tools adopted by the FCC for meeting its regulatory objectives. Special emphasis is placed on identifying those aspects of regulatory experience in the United States that appear most relevant in the regulation of dominant carriers marketing multiline terminal equipment in Canada.

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[1] The FCC defines a "dominant carrier" as a carrier that possesses "market power." As the FCC explains, market power refers to ". . . the control a firm can exercise in setting the price of its output. A firm with market power is able to engage in conduct that may be anticompetitive or otherwise inconsistent with the public interest. This may entail setting price above competitive costs in order to earn supranormal profits, or setting price below competitive costs to forestall entry by new competitors or to eliminate existing competitors . . . ." See Federal Communications Commission, In the Matter of Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, First Report and Order, 85 FCC 2d 1 (1980), CC Docket 79-252. By contrast, a "non-dominant" or competitive carrier" lacks market power.

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A. Rate-of-Return-Rate Base Regulation and the Emergence of Competition in Telecommunications Industry

Dramatic changes have transformed the telecommunications industry in recent decades. The development of new telecommunications technologies, rapid innovation by entrepreneurs, and sustained growth in market demand have eroded traditional market boundaries and fostered a dynamic industry structure.[2] In particular, the confluence of computer and telecommunications technology in recent decades has spurred the development of new telecommunications products and services and provided a powerful incentive for new firms to enter traditional monopoly markets for telecommunications services.[3] This economic incentive for broadened participation in the telecommunications industry has created much tension, controversy, and public debate surrounding the appropriate regulatory response to such potential

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[2] "Structure" (or "market structure") refers to certain relatively stable attributes of industry organization. Among other things, these attributes include the number and size distribution of buyers and sellers; nature and extent of product differentiation; height of barriers to entry and exit from the industry; cost structures of firms in the industry (e.g., the ratio of fixed to variable costs); the extent of vertical integration and conglomerateness in the industry; and certain attributes of market demand such as elasticity. See F. M. Scherer, Industrial Market Structure and Economic Performance, 2d ed. (Chicago: Rand McNally, 1980), Chapter 1.

[3] A good discussion of the confluence of computer and telecommunications technology and its economic implications is provided by Gerald W. Brock, The Telecommunications Industry: The Dynamics of Market Structure (Cambridge: Harvard University Press, 1981).

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competition with the traditional, regulated monopoly suppliers of telecommunications products and services.[4]

The basis for much of this debate concerning regulatory policy and practice is summarized in Table 1.

TABLE 1

INDUSTRY CHARACTERISTICS AND ASSUMPTIONS ASSOCIATED WITH THE THEORY AND PRACTICE OF RATE-OF-RETURN-RATE BASE REGULATION

I. Industry Environment for Typical Public Utility Market

- Moderate, predictable growth in market demand
- Homogeneous, well-defined outputs
- Market boundaries (service areas) are well-defined and local or regional in character
- Cost of production characterized by economies of scale in the long run and declining average cost in the short run
- Financial incentive for competitive market entry is low; monopoly franchise usually prohibits multi-vendor supply

II. Conventional Tools of Rate-of-Return-Rate Base Regulation

- Control of market entry and exit (facilities authorization and service discontinuance)
- Control of rate levels (aggregate "revenue requirements")
- Control of rate structures
- Control of total earnings (rate-of-return control)
- Control of quality of service
- Control of conditions of service (common carrier obligations)

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[4] A detailed discussion of the FCC's response to such pressures is provided by Walter G. Bolter, Jerry B. Duvall, Fred J. Kelsey, and James W. McConnaughey, Telecommunications Policy for the 1980s: The Transition to Competition (Englewood Cliffs, N.J.: Prentice-Hall, Inc. for the Washington Program, the Annenberg Schools of Communications, 1984), Section III. (Henceforth referenced as the "Annenberg Study.")

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The upper part of Table 1 lists some of the major economic characteristics of typical public utility markets.[5] Typically, the demand for public utility services grows moderately on an annual basis, often reflecting population growth in the service area. Moreover, the output supplied by the public utility is well-defined and homogeneous, e.g., gallons of water, kilowatt hours of electricity, cubic feet of natural gas, and so forth. In most cases, the market area served by the public utility is a well-defined local or regional area protected by a monopoly franchise.[6]

It is usually asserted (but, typically, not demonstrated) that the production of such services involves "natural monopoly" cost characteristics, i.e., service can be provided to consumers at minimum cost in the defined service area if only one firm supplies all market demand. Thus, it is alleged that permitting competition in the service area would increase the long run average cost of production to consumers by denying the natural monopoly firm the opportunity to exploit all economies of scale in production. Moreover, permitting other firms to compete

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[5]Typical public utility markets include natural gas transmission and distribution, local water and sewer service, and the transmission and distribution of electric power. Firms supplying these markets in the United States are commonly subjected to rate-of-return-rate base regulation by a state or federal (or both) regulatory commission unless they are government-owned.

[6]Municipal and privately-owned electric power utilities sometimes compete in the same service area, often to the benefit of consumers. For an empirical study of such electric power competition, see Walter J. Primeaux, "An Assessment of X-Efficiency Gained Through Competition," Review of Economics and Statistics 59 (February 1977):105-08.

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with the natural monopolist would result in the wasteful duplication of investment in facilities.[7] Moreover, it is also asserted that most public utilities are capital-intensive which implies a large ratio of fixed to variable costs in the short run. If the public utility is granted a monopoly in its service area, it can "spread the overhead" over a large volume of production and minimize the short run unit cost of production.[8]

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[7]The modern theory of natural monopoly assumes that the public utility firm produces multiple outputs and emphasizes (1) product-specific economies of scale, (2) the economies of jointly producing multiple products or services ("economies of scope"), and (3) the interaction of product-specific economies of scale and economies of joint production in assessing the existence and extent of natural monopoly characteristics of production. Generally speaking, a firm is a natural monopoly in terms of the recent theory if one firm can produce a given array of public utility services (for any level of production) more cheaply than multiple, competing suppliers producing the same group of services by specializing in the production of individual services comprising the array. A brief introduction to the essential cost concepts comprising this recent theory of natural monopoly is provided by Elizabeth E. Bailey and Ann F. Friedlaender, "Market Structure and Multiproduct Industries," Journal of Economic Literature 20 (September 1982):1024-1048. Definitive treatments of the theory are provided by William W. Sharkey, The Theory of Natural Monopoly (Cambridge: Cambridge University Press, 1982) and William J. Baumol, John C. Panzar, and Robert D. Willig, Contestable Markets and The Theory of Industry Structure (New York: Harcourt Brace Jovanovich, 1982). For discussion of the older view of natural monopoly based on the assumption of single-output production with pervasive economies of scale, see Paul J. Garfield and Wallace F. Lovejoy, Public Utility Economics (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964), Chapter 2.

[8]It is important to stress that the factors influencing reductions in short run and long run average costs for the single-output natural monopoly firm are fundamentally different. Declining short run average cost simply reflects the arithmetic effect of spreading the fixed costs of public utility facilities of a given capacity over larger volumes of output. By contrast, declining long run average cost reflects the economies of scale that are realized by building new facilities with larger productive capacity.

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Finally, it is usually asserted that other firms will have little incentive to compete with the public utility, since the utility firm will be able to produce at minimum unit cost unlike a potential competitor. Moreover, by granting the public utility a monopoly franchise, the regulatory commission may be able to implement "social pricing" to achieve diverse regulatory goals.[9]

Granting a public utility a monopoly franchise implies, however, that the utility may be able to exercise monopoly power to the detriment of consumers. Thus, to gain the potential economies inherent in the (assumed) natural monopoly cost characteristics of single-firm production, society subjects the utility to economic regulation, specifically, rate-of-return-rate base regulation. Such regulation is intended to substitute for the absence of competition which would otherwise constrain the exercise of market power by the monopoly firm.[10] In principle, the regulatory process constrains the exercise of monopoly power by the utility firm by applying the tools

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[9]"Social pricing" refers to rate structures that may include non-compensatory rate elements intended to redistribute income among user groups or achieve some other social purpose.

[10]This description of the conventional rationale for public utility regulation has been vigorously disputed by writers affiliated with the "Chicago School" of economic policy. In short, the "Chicago view" on natural monopoly asserts that the possibility of indirect competition with the natural monopoly firm is sufficient over the long run to restrain the behavior of the monopoly without imposing either the direct costs of government surveillance by a regulatory commission or the social costs implied by economic distortions induced by rate-of-return regulation. A clear statement of the Chicago view is provided by Richard A. Posner, "Natural Monopoly and Its Regulation," Stanford Law Review 21 (February 1969):548-643.

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of rate-of-return-rate base regulation listed in the lower half of Table 1. Thus, society substitutes detailed "command and control" through a regulatory commission for the discipline of competitive market forces. By exercising such regulation, society gains the (asserted) cost advantages inherent in the technology of natural monopoly firms while avoiding the incentives of a monopoly firm to restrict output and raise the price of output above competitive levels, i.e., exercise its market power.

As shown in Table 1, the tools of rate-of-return-rate base or public utility regulation include control of market entry and exit; control of rate levels ("revenue requirements") and rate structures; control over the total earnings of the regulated firm through prescription of an "allowed rate of return;" and regulation of the quality and terms and conditions of service provided to consumers. Thus, the regulatory commission may impose certain "common carrier" duties and responsibilities on the public utility, including the supply of service to some user groups at non-compensatory (below cost) rates.[11] In return, the public utility is granted rights, including, but necessarily limited to, the right to charge "reasonable rates" that will recover reasonable expenses plus a "fair" rate of return; the

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[11] A brief description of the elements of rate-of-return-rate base regulation is provided by Richard Schmalensee, The Control of Natural Monopolies (Lexington, Massachusetts: Lexington Books, D.C. Heath and Co., 1979), Chapter 3. A complete textbook treatment of rate-of-return-rate base regulation is provided by Garfield and Lovejoy, Public Utility Economics.

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right of eminent domain; the right to operate under reasonable rules and regulations; and the right to a monopoly franchise.

As even casual empiricism would suggest, the typical public utility industry environment portrayed in Table 1 is not very descriptive of the contemporary telecommunications industry. The markets for terminal equipment, long distance transmission services, and local exchange telephone service are dynamic, with market boundaries extending not only nationwide but also worldwide. Products and services are typically heterogeneous, not homogeneous, and technological change and innovation are rapid. Certainly insofar as production of terminal equipment is concerned, there is no empirical evidence suggesting natural monopoly cost characteristics. Empirical evidence supporting natural monopoly cost characteristics in other telecommunications markets is controversial.[12] Most important, however, is the profit incentive for entry of new firms into markets currently supplied by regulated monopoly firms. Indeed, competition -- not natural monopoly -- appears the more "natural" industry structure.

Since the industry environment described in Table 1 does not appear to characterize the contemporary telecommunications industry, what then is the role of rate-of-return-rate base regulation intended to constrain the behavior of a monopoly

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[12]A survey of empirical studies on economies of scale in the Bell System prior to divestiture is provided by John R. Meyer et al., The Economics of Competition in the Telecommunications Industry (Cambridge: Oelgeschlager, Gunn & Hain, Publishers, 1980), Chapter 4.

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firm? The answer is unavoidably complex. First, some segments of the telecommunications industry may retain natural monopoly characteristics (such as basic local exchange telephone service) for the present, and public utility regulation may still be appropriate.[13] Second, some market segments may be sufficiently competitive that they no longer require any form of regulation.[14] Third, some market segments may remain dominated by the incumbent monopoly firm, although new entrants may wish to compete with it. Conversely, the regulated monopolist may wish to enter adjacent, non-regulated markets made attractive by changes in technology and consumer demand. In this last case, total deregulation of the regulated monopolist may not be appropriate until competition is more fully developed. Yet rate-of-return regulation may provide an incentive for dominant firm conduct that is inimical to the rapid development of competition.[15] Thus, it seems evident that neither total deregulation nor continuing rate base regulation of the dominant firm are appropriate public policy, given the dynamic structure of the contemporary telecommunications industry.

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[13]The form of such regulation could be modified, however, to offset possible economic distortions induced by rate-of-return regulation. One example of such modified utility regulation includes regulation through "markup on total cost." For details of this approach and further references, see the Annenberg Study, pp. 115-117.

[14]The FCC has determined that the terminal equipment industry in the United States is workably competitive and has deregulated the supply of terminal equipment as a part of a common carrier telecommunications service provided by both local exchange or long distance carriers.

[15]How rate-of-return regulation may provide an incentive for anticompetitive conduct is considered in the following section.

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The FCC's response to this complex problem may be described as "partial deregulation" whereby regulated entities are permitted to enter unregulated markets subject to regulatory separation requirements and conduct restrictions. The conceptual basis for regulatory separation requirements and conduct restrictions is examined in the following section.

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B. Strategic Dominant Firm Conduct and Rate-of-Return-Rate Base Regulation

Opening regulated monopoly markets to competition provides an incentive and opportunity for the regulated monopoly firm to adjust its rates and rate structures in response to the change in industry structure. Without competition, the regulated monopoly firm has little or no incentive to align rates closely to the cost of service. Indeed, the regulated firm constrained by regulation to recover aggregate revenues just sufficient to cover total costs including a "fair" rate of return may have little knowledge of the actual costs of individual services.[16] Indeed, the FCC viewed its early open entry policies as a new type of regulatory tool to encourage dominant carriers to file lawful, non-discriminatory rates. As the FCC observed in 1970,

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[16] In some cases, regulatory commissions may actually encourage cross-cubsidization among some user groups to achieve certain social objectives. The Bell System during the monopoly era freely admitted that it had little knowledge of its service costs. As Alvin von Auw, former AT&T vice president and assistant to the chairman of AT&T points out, "... How little the Bell operating companies knew about their own costs and how meagre were their resources for finding out would surely astonish managers reared in manufacturing where elaborate cost accounting procedures, time and motion studies and such concepts as should-take hours, standard deviation and manufacturing variations are a way of life, indeed a sine qua non of survival. The Bell companies, however, having over most of their history purveyed a for the most part homogenized service to a largely undifferentiated body of customers needed to know only that total revenues exceeded total costs sufficiently to reward share owners appropriately...." Alvin von Auw, Heritage & Destiny: Reflections on the Bell System in Transition (New York: Praeger Publishers, 1983), p. 220.

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> In an industry of the size and growing complexity of the communications common carrier industry, the entry of new carriers could provide a useful regulatory tool which would assist in achieving the statutory objectives of adequate and efficient services at reasonable charges. Competition could afford some standard for comparing the performance of one carrier with another. Moreover, competitive pressure may encourage beneficial changes in AT&T's services and charges in the specialized field, and stimulate counter innovation or the more rapid introduction of new technology....[17]

In 1977, the FCC reiterated its view of open entry policies as a regulatory tool:

> ...[I]n those circumstances where we warrant that the public interest will be served by competition, the 'competition' so permitted is required to be consistent with the regulatory requirements of the Communications Act. An applicant is still required to demonstrate legal, technical and financial qualifications ('fitness'), be subject to conditions and control over entry and exit from common carriage..., be subject to control over price and terms of service, and provide service on a non-discriminatory basis and upon reasonable demand.... Thus, even in concluding that the policy of limited open entry was preferable in the domestic satellite field, we noted that our policy did not constitute true open entry as in an unregulated field. We had no intention of abandoning our regulatory responsibilities in favor of permitting free market forces unfettered rein to regulate entry or behavior in this area. We do not view competition as an end in itself, but rather as a regulatory tool

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[17] Federal Communications Commission, In the Matter of Establishment of Policies and Procedures for Consideration of Applications to Provide Specialized Common Carrier Services in the Domestic Public Point-to-Point Microwave Radio Service and Proposed Amendments to Parts 21, 43, and 61 of the Commission's Rules, Notice of Inquiry to Formulate Policy, Notice of Proposed Rulemaking, and Order, 24 FCC 2d 333 (1970), Docket 18920. (Emphasis supplied.) Also see the discussion of "competition as regulation" in the Annenberg Study, pp. 41-42.

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which we can utilize to benefit the public interest....[18]

By 1978, the FCC began to view its open entry policies more as a substitute for rate-of-return-rate base regulation rather than as a supplement to such regulation.[19] By this time the FCC had accumulated much experience with the reaction of regulated dominant carriers to the actual or potential competition which the FCC hoped would improve the performance of the regulated firm and result in lawful, non-discriminatory, cost-based tariffs. In particular, AT&T filed a succession of interstate private line tariffs with substantial price reductions intended to "meet the competition."[20] The FCC's extreme difficulty in determining the lawfulness of AT&T's pricing response to competition underscored a major weakness of open entry policies as a way to harmonize the conduct of a regulated dominant firm with regulatory goals, viz., the possibility that the regulated firm may "overreact" and threaten competition rather than just meet it.

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[18]Federal Communications Commission, In the Matter of Satellite Business Systems, Memorandum Opinion, Order, Authorization and Certification, 62 FCC 2d 1070 (1977). (Emphasis supplied; footnote references omitted.)

[19]For discussion of this policy transformation, see Jerry B. Duvall, "The Conceptual Framework of Common Carrier Policymaking at the Federal Communications Commission in Recent Years: An Economist's Perspective" in Proceedings at the 1981 Rate Symposium on Problems of Regulated Industries (Columbia, Missouri: University of Missouri Extension Publications, 1981), pp. 351-74.

[20]For a brief overview of AT&T's pricing response to competition, see Stanley M. Besen and John R. Woodbury, "Regulation, Deregulation, and Antitrust in the Telecommunications Industry," The Antitrust Bulletin 28 (Spring 1983): 39-68. A more detailed discussion is provided in the Annenberg Study, Section III.

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The FCC attempted to deal with this problem in its landmark Docket 18128 decision prescribing fully distributed cost as the lawful cost standard for AT&T's interstate services.[21] The FCC's effort to assess the lawfulness of AT&T's pricing behavior in response to competition using a costing methodology was not entirely successful.[22] Nevertheless, the FCC's concern for the pricing response of a regulated dominant firm was well-placed, although costing methodologies may be inadequate taken alone for detecting and constraining objectionable dominant firm behavior.

Analytically, subjecting a regulated dominant firm to competition may produce two major regulatory problems, viz., (1) strategic dominant firm conduct intended to deter the entry of new firms or constrain the growth of existing fringe competitors; and (2) pricing distortions induced by rate-of-return regulation that may have an anticompetitive effect. As will be shown, both problems can be treated in part by regulatory separation requirements and conduct restrictions.

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[21] Federal Communications Commission, In the Matter of American Telephone & Telegraph Company, Long Lines Department Revisions of Tariff FCC No. 260 Private Line Services, Series 5000 (TELPAK), Memorandum Opinion and Order, 61 FCC 2d 587 (1976), Docket 18128.

[22] For further discussion, analysis, and evaluation of the FCC's experience with costing methodologies as regulatory tools, see the Annenberg Study, Section III.

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1. Strategic Dominant Firm Conduct

All business firms formulate goals and strategies for achieving them. In workably competitive markets, industry structure constrains the selection of goals and strategy of competitive firms and limits the exercise of market power. In short, the competitive firm views industry structure as exogenous; the conduct of such firms and the resulting market performance may be predicted from the existing market structure.[23]

Dominant firms are not so constrained in their choice of goals and strategy. In many cases, a dominant firm can exercise market power and influence both industry structure and performance. Thus, through its choice of corporate goals and strategies, a dominant firm can influence the actual number of competing firms in the industry; the speed of entry of new firms; the rate of growth of fringe competitors; and other aspects of industry organization. In recent years, this view of the behavior of dominant firms has become formalized as the "corporate strategy" model of dominant firm behavior.[24] The corporate strategy model of dominant firm behavior hypothesizes that market structure in combination with the dominant firm's stock of tangible or intangible assets or skills determine the firm's

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[23]See Scherer, Industrial Market Structure and Economic Performance, Chapter 1.

[24]This model is typically associated with scholars at the Harvard Business School. An overview of this approach is provided by Michael E. Porter, "Industrial Organization and the Evolution of Concepts for Strategic Planning: The New Learning," Managerial and Decision Economics 4 (1983):172-180.

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corporate strategy, i.e., its long run plan for profit maximization.[25] Michael Porter of the Harvard Business School describes corporate strategy as

> ...a set of goals for the firm and a set of functional strategies for achieving those goals. It follows that every firm, explicitly or implicitly, will have a strategy and this strategy is a way of describing the important aspects of firm behavior....
>
> The strategy of the firm is its search for a comparative advantage in its industry. The firm not only sets its price and quality but simultaneously determines a large number of other parameters of its competitive posture within its industry. A critical feature of this vector of decision variables is that they are interrelated....[26]

Richard Caves emphasizes the importance of the firm's stock of semi-fixed assets or skills in formulating its corporate strategy. As Caves explains,

> ...The firm rests on contractual relations that unite and coordinate various fixed assets or factors, some of them physical, others consisting of human skill, knowledge, and experience - - some of them shared collectively by the managerial hierarchy. These factors are assumed to be semipermanently tied to the firm by recontracting costs and, perhaps, market imperfections. An implication is that the firm does its long-run planning taking fixed factors as given, so that its maximization process becomes one of maximizing quasi-rents to these fixed factors. Another implication of these heterogeneous fixed assets is that a firm can succeed (i.e., forge a viable combination of fixed inputs) in a given market by possessing superior assets of several types. Equally successful market rivals thus may employ quite different

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[25]Richard E. Caves, "Industrial Organization, Corporate Strategy and Structure," Journal of Economic Literature 18 (March 1980): 64.

[26]Michael E. Porter, Interbrand Choice, Strategy, and Bilateral Market Power (Cambridge: Harvard University Press, 1976), pp. 70-71.

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bundles of fixed asset qualities (strengths and weaknesses).[27]

How the top management of a firm perceives market structure and assesses the firm's strengths and weaknesses will jointly determine both the choice of corporate strategy and "organizational structure," i.e., "...the arrangements whereby the firm motivates, coordinates, appraises, and rewards the inputs and resources that belong to its coalition."[28] More concretely, organizational structure refers to the internal organization of the firm as described in general terms by the corporate organization chart. "Functional" and "multidivisional" (or "M-form") are the two major organizational structures.[29] Functional organization consists of departments that perform well-defined functions within the firm, e.g., production, finance, marketing, and personnel. Multidivisional organization consists of divisions corresponding to discrete lines of business or specific products and services. Each division is organized as a "profit center" and contains its own functional departments.[30]

M-form organization may offer important advantages for a growing firm. As Williamson suggests, M-form organizational

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[27]Caves, "Industrial Organization, Corporate Strategy and Structure," p. 65. (Emphasis supplied; footnote citations omitted.)
[28]Ibid., p. 66.
[29]See Alfred D. Chandler, Jr., Strategy and Structure: Chapters in the History of the American Industrial Enterprise (Cambridge: MIT Press, 1962).
[30]A detailed study of functional, M-form, and various hybrid organizational structures is provided by Oliver E. Williamson, Markets and Hierarchies: Analysis and Antitrust Implications (New York: The Free Press, 1975), Chapter 8.

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structure tends to induce appropriate goal-seeking behavior by the various divisions and facilitates the separation of strategic from operating decision making, among other advantages. In view of such advantages, Williamson has advanced the "M-form hypothesis," viz., "The organization and operation of the large enterprise along the lines of the M-form favors goal pursuit and least-cost behavior more nearly associated with the neoclassical profit maximization hypothesis than does the U-form [i.e., functional] organizational alternative."[31] Some empirical support for Williamson's M-form hypothesis is provided by a study of organizational structure in the petroleum industry.[32]

Whatever the merits of M-form organization, the choice of organizational structure will ultimately depend on the firm's chosen corporate strategy and the constraints implied by market structure and the firm's inventory of semi-fixed assets and skills. Taken together, the interaction of market structure, the firm's tangible or intangible semi-fixed assets or skills, corporate strategy, and organizational structure determine firm performance as measured by some measure of profitability or other performance indicator. The causal relationships linking firm performance to market structure, corporate assets, corporate

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[31] Williamson, Markets and Hierarchies, p. 150.
[32] Henry Ogden Armour and David J. Teece, "Organizational Structure and Economic Performance: A Test of the Multidivisional Hypothesis," Bell Journal of Economics 9 (Spring 1978):106-122.

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strategy, and organizational structure may be referred to as the "corporate strategy" model of dominant firm behavior.

Firm performance assessed over all firms comprising the industry provides the basis for assessing market performance. Certain attributes of firm performance may have important "feedback" effects on market structure. As Caves concludes, "...there is strong evidence to support the...[proposition that] [t]he structures of markets have been affected by the organizational options open to firms."[33] Such feedback effects on market structure may tend to offset the pro-competitive purpose of open entry policies adopted by a regulatory commission. As implemented by the FCC, structural regulation is intended to neutralize undesirable feedback effects on industry structure by regulating certain aspects of the internal organization of regulated dominant firms. Viewed in terms of the corporate strategy model of dominant firm behavior, structural regulation directly controls organizational structure which in turn affects corporate strategy and firm performance. Thus, by regulating organizational structure, which often means prescribing M-form organization for certain lines of business, a regulatory commission may be able to control dominant firm strategic behavior that would have an adverse impact on market structure.

The logic of structural regulation is straightforward when viewed in terms of the corporate strategy model. Nevertheless,

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[33]Caves, "Industrial Organization, Corporate Strategy and Structure," p. 88.

as the FCC's experience clearly demonstrates, a regulatory commission will confront major difficulties in attempting to distinguish between (1) a dominant firm response to competition that is non-predatory and "meets the competition" and (2) dominant firm conduct intended to deter the entry of new competitors, thwart the growth of existing, efficient competitors, or otherwise harm consumers. As the corporate strategy model of dominant firm behavior suggests, performance of the dominant firm depends on corporate strategy. Conceptually, corporate strategies may be classified into two broad groups: (1) strategies that enhance the dominant firm's competitive posture toward current and prospective customers; and (2) strategies that attempt to influence market structure to the advantage of the dominant firm and, possibly, to the disadvantage of its competitors.[34]

The first broad classification of strategies includes three "generic competitive strategies," namely, (1) overall cost leadership; (2) differentiation; and (3) focus.[35] Cost leadership is a long term profit strategy that emphasizes low-cost production using efficient-scale facilities and vigorous pursuit of all possible ways to reduce costs. A differentiation strategy requires the firm to create a product or service that is perceived as unique in the entire industry. A differentiation strategy may be implemented along several different product or service

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[34]Bolter, Duvall, et al., Telecommunications Policy for the 1980s, p. 67.
[35]Michael E. Porter, Competitive Strategy: Techniques for Analyzing Industries and Competitors (New York: The Free Press, 1980), Chapter 2.

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dimensions. The focus strategy is much narrower than either the cost leadership or differentiation strategy. The focus strategy centers on serving a particular segment of the market exceptionally well compared to competitors seeking a broader market.

Successful implementation of generic competitive strategies by dominant firms on a large scale will influence market structure by raising barriers to entry or creating new ones. For example, successful implementation of an overall cost leadership strategy by a dominant firm will provide the firm with an absolute cost advantage, one possible type of barrier to entry.[36] Such an entry barrier will tend to deter entry of new firms or retard the growth of existing competitors that are less efficient than the dominant firm pursuing the cost leadership strategy. Moreover, some of the less efficient competitors may be forced to exit the industry as the "cost leader" dominant firm captures an increasing share of the market. Nevertheless, such outcomes of the rivalry among competitors in imperfectly competitive markets need not imply either anticompetitive intent by a dominant firm or injury to consumers.[37] Indeed, consumers clearly benefit from lower prices that result from an overall cost leadership corporate strategy. Similarly, consumers are also likely to

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[36]See Joe S. Bain, Industrial Organization, 2d ed. (New York: John Wiley & Sons, 1968).

[37]The importance of defining entry barriers with reference to some standard of economic welfare is stressed in C. C. v. Weizsacker, "A Welfare Analysis of Barriers to Entry", Bell Journal of Economics 11 (Autumn 1980):399-420.

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benefit from a broader choice of products and service that may result from successful pursuit of a differentiation strategy.[38] Nevertheless, some less efficient or less innovative firms may be forced from the market and industry concentration increased as a result of the successful pursuit of generic competitive strategies by dominant firms. Even though market structure in terms of the actual number of competitors may be influenced by generic competitive strategies, market performance may well be improved.

In general, generic competitive strategies pursued by dominant firms need not necessarily represent a threat to a regulatory commission's open entry policies and the development of workable competition. The second group of strategies, i.e., corporate strategies that may disadvantage efficient competitors and harm consumers, are a threat to a regulatory commission's open entry policies and should be a focal point of regulatory policy. In recent years, strategic dominant firm conduct has also become a focal point in antitrust debates concerning the appropriate public policy response or remedy for strategic, entry-deterring behavior by unregulated dominant firms.[39] In

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[38] Assessing the consumer benefits of product differentiation is more complex, however, than evaluating the benefits of overall cost reductions. For a thorough analysis of this point, see Kelvin Lancaster, Variety, Equity, and Efficiency (New York: Columbia University Press, 1979).

[39] An excellent overview of this current debate in antitrust policy is provided by the conference papers collected in Strategy, Predation, and Antitrust Analysis, ed. Steven C. Salop (Washington, D. C.: Federal Trade Commission, 1981). Also see the symposium on Antitrust Law and Economics in the April, 1979, issue of the University of Pennsylvania Law Review.

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response to this debate, economists have begun to explore systematically and rigorously the nature of dominant firm strategies that may be inimical to the development of competition.[40]

A survey of the various anticompetitive dominant firm strategies identified in the recent literature cannot be attempted here. Rather, the following discussion briefly identifies several major competitive problems that may be the direct result of strategic behavior by regulated dominant firms. Emphasis is placed on the possible interaction of rate-of-return-rate base regulation and dominant firm strategic behavior as a major causal influence affecting market performance in the telecommunications industry.

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[40]This growing literature is a response to the views of the Chicago School that tends to minimize the real-world significance of strategic, anticompetitive behavior. For examples of this new literature, see Michael A. Spence, "Entry, Capacity, Investment, and Oligopolistic Pricing," Bell Journal of Economics 8 (Autumn 1977):534-44 and Steven C. Salop and David T. Scheffman, "Raising Rivals' Costs," American Economic Review 73 (May 1983):267-71. A brief discussion of some of this literature is provided by Bolter, Duvall, et al., Telecommunications Policy for the 1980s, pp. 69-77.

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2. Rate-of-Return Regulation, Strategic Conduct, and Distortions in Market Performance

The FCC's experience in implementing pro-competitive policies in the telecommunications industry provides valuable insights concerning the general character of the competitive problems induced by liberalizing entry into former monopoly markets. The following discussion draws upon the experience in the United States to identify the competitive problems most likely to confront Canadian policymakers attempting to encourage competition in the Canadian terminal equipment industry. While the following discussion is necessarily brief, it does reveal some of the subtlety, complexity, and possible trade-offs involved in designing an appropriate regulatory response. As discussed later in this section of the report, structural regulation represents one approach for dealing with these competitive problems.

Three potential competitive problems induced by open entry policies in former regulated monopoly markets require emphasis, viz., (1) regulatory evasion and strategic cost-shifting; (2) inter-service cross-subsidization; and (3) vertical restrictions that disadvantage competitors and harm consumers. Each problem requires brief discussion.

a. Regulatory Evasion and Strategic Cost-Shifting

Establishing regulatory boundaries between regulated and unregulated lines of business provides an incentive for the regulated firm to evade the constraints of rate-of-return

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regulation by strategic cost-shifting among regulated and unregulated affiliates comprising the firm.[41] In particular, a vertically-integrated rate base regulated firm has an incentive to evade rate-of-return-rate base regulation by shifting costs from an unregulated, vertically-integrated affiliate to the regulated entity serving monopoly markets.[42] If rate-of-return-rate base regulation is applied only to the final stage of production in a vertically-integrated firm, it can be shown that the regulated entity can evade the profit constraint imposed by rate-of-return regulation by paying excessive prices for equipment furnished by the unregulated, vertically-integrated affiliate.[43] The equipment purchased by the regulated entity at inflated prices from its unregulated affiliate enters the rate base of the regulated entity and is recovered in its rates for regulated services. As a result, excessive profits, i.e., profits that exceed the rate-of-return earnings constraint, are shifted to the unregulated affiliate through the mechanism of excessive equipment prices paid by the regulated entity. Moreover, the absolute amount of profits that the unregulated firm may earn

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[41] See James W. McKie, "Regulation and the Free Market: The Problems of Boundaries," Bell Journal of Economics and Management Science 1 (Spring 1970): 6-26.

[42] See David Dayan, "Vertical Integration and Monopoly Regulation," Ph.D. dissertation, Princeton University, 1972. Also see Robert J. Reynolds and Thomas C. Spavins, "Natural Monopoly and Regulatory Evasion," paper presented at the Eastern Economic Association, Boston, Massachusetts, May 10, 1979 and the discussion in Frederick R. Warren-Boulton, Vertical Control of Markets: Business and Labor Practices (Cambridge: Ballinger Publishing Co., 1978), pp. 40-48.

[43] Dayan, "Vertical Integration and Monopoly Regulation."

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for any given rate of return is now increased, since the dollar value of the rate base is inflated by the transfer of excessive costs from the unregulated, vertically-integrated affiliate.

This type of dominant firm strategic behavior is extremely difficult for a regulatory commission to detect. If there is little or no competition in the market for the equipment which becomes investment in the rate base of the regulated entity, then a regulatory commission will lack information concerning benchmark prices that can be compared with the transfer prices for equipment bought by the regulated entity from the unregulated, vertically-integrated affiliate.[44]

This dominant firm incentive for evading the earnings constraint imposed by rate-of-return-rate base regulation emphasizes the importance of corporate organizational structure as a factor influencing the conduct and performance of the firm. Thus, the decision by a regulated firm to integrate vertically may be motivated not by considerations of economic efficiency but as a dominant firm strategy for evading the profit constraint imposed by regulation. As discussed later in this section, some form of structural regulation may be able to neutralize such dominant firm behavior.

Rate-of-return-rate base regulation also provides incentives for regulatory evasion for non-vertically-integrated regulated

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[44]For a detailed analysis of this problem as it related to the purchase of Western Electric equipment by the Bell System prior to divestiture, see Manley R. Irwin, The Telecommunications Industry: Integration vs. Competition (New York: Praeger Publishers, 1971).

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firms. Not only does rate-of-return regulation create an incentive for exploiting the vertical boundary between regulated and unregulated stages of production, it also creates an incentive to exploit the horizontal boundary between regulated and unregulated output markets. More specifically, rate-of-return-rate base regulation creates an incentive for a regulated firm to enter adjacent markets at prices below marginal cost if the rate-of-return constraint only applies to its total earnings from both markets rather than an earnings constraint imposed for each market separately. As Averch and Johnson point out,

> ...The [regulated] firm has an incentive to expand into other regulated markets [i.e., markets where the regulated firm is still subject to aggregate rate-of-return-rate base regulation], even if it operates at a (long-run) loss in these markets; therefore, it may drive out other firms or discourage their entry into these other markets, even though the competing firms may be lower-cost producers....[45]

Averch and Johnson show that if the allowed rate of return exceeds the regulated firm's financial cost of capital, then there exists an incentive for the rate base regulated firm to sell some of its output in other markets at a price below marginal cost. The below-marginal-cost pricing will tend to stimulate the quantity of output sold by the regulated firm. This growth in output will, in turn, stimulate expansion in the amount of

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[45] Harvey Averch and Leland Johnson, "Behavior of the Firm Under Regulatory Constraint," American Economic Review 52 (December 1962): 1053-69.

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rate base investment. The expanded rate base increases the amount of profit the regulated firm is permitted to earn.[46]

b. Inter-service Cross-Subsidization

Closely related to the problem of regulatory evasion by strategic cost-shifting and below-marginal-cost pricing is the problem of inter-service cross-subsidization. Inter-service cross-subsidization results if the revenues for a particular service provided by the regulated firm are not equal to the cost of production. If revenues for a service exceed its cost of production, then the service is a source of subsidy. Conversely, if revenues fall short of the cost of production, the service is the recipient of subsidy. In general, regulatory commissions view the cross-subsidization of one service with revenues derived from another service as unfair unless the regulatory commission explicitly mandates such cross-subsidization.[47] Regulatory commissions generally find that rates that are "subsidy free" are

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[46] This incentive for below-marginal-cost pricing in adjacent markets is called the "A-J output effect". This economic distortion induced by rate-of-return regulation is distinct from the more familiar "A-J input effect" that refers to the incentive for a rate base regulated firm to use an inefficient, non-cost-minimizing amount of capital in production.

[47] State regulatory commissions in the United States have often approved tariffs of exchange carriers that involved asserted cross-subsidies, e.g., the subsidization of residential telephone services by business subscribers. In general, regulatory commissions find such cross-subsidies both lawful and fair, since other regulatory goals are presumably met through such non-compensatory rates.

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just and reasonable, unless the regulatory commission explicitly mandates inter-service cross-subsidization.

As the previous discussion anticipates, rate-of-return-rate base regulation may provide an incentive for the regulated firm to cross-subsidize the service provided at below-marginal-cost rates with revenues derived by raising prices in the monopoly service market.[48] This inter-service cross-subsidization may have an adverse impact on the development of competition. As Averch and Johnson point out,

> ...The regulated firm can 'afford' to take (long-run) losses in these second markets while competing firms cannot. Under these circumstances, it is conceivable that the firm could drive out lower-cost producers - - the loss it willingly takes in second markets could exceed the difference between its costs and the lower costs of other firms. It may succeed, therefore, in either driving lower cost firms out of these markets or of discouraging their entry into them....[49]

Although such dominant firm conduct is clearly inimical to the development of competition, it should be distinguished from "predatory" conduct in unregulated markets. As Averch and Johnson explain, inter-service cross-subsidization

> ...is unlike the textbook case of 'predatory price-cutting' where the regulated monopolist may temporarily cut prices in outside competitive markets to drive out rivals and subsequently raise prices to monopoly levels. The monopolist would ordinarily engage in such a practice only if he had the expectation that in the long run he would make a positive profit

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[48]It is assumed, however, that regulation has prevented the regulated firm from establishing a profit-maximizing price for the monopoly service prior to implementing the cross-subsidization strategy.
[49]Averch and Johnson, "Behavior of the Firm Under Regulatory Constraint," p. 1058.

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> in these additional markets; but here even in the case of a long-run loss the regulated firm may find operations in such markets *to be advantageous as long* as the firm is permitted to include its capital input in these markets in its rate base.[50]

Thus, rate-of-return-rate base regulation apparently provides an incentive for inter-service cross-subsidization that may undermine a regulatory commissions' open entry policies. As Averch and Johnson observe, a regulated firm may have "...an incentive to operate at a loss in competitive markets and to shift the financial burden to its other services. In this sense, it would have an 'unfair' advantage over other firms which do not have other markets sufficiently profitable to bear the loss of competing with it...."[51]

The incentive for potential anticompetitive conduct induced by rate-of-return-rate base regulation and analyzed by Averch and Johnson requires the assumption that the regulated firm's allowed rate of return exceeds its financial cost of capital. Thus, setting the allowed rate of return precisely equal to the regulated firm's financial cost of capital would appear to eliminate the incentive for inter-service cross-subsidization and thereby produce subsidy-free rates. Unfortunately, recent work in economic theory suggests that a perfectly-regulated firm earning no excess profits and only its financial cost of capital may still set rates that imply inter-service cross-subsidization, even though such rates may be consistent with

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[50] Ibid.
[51] Ibid., p. 1065.

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maximum aggregate economic welfare subject to a revenue constraint requiring the firm to at least break-even. Such rates, called "Ramsey prices," require the regulated firm to set individual rates such that each price is optimally "marked up" above service-specific marginal cost to recover total shared costs. The amount of mark-up is ideally selected, however, to minimize the loss in economic welfare implied by prices above marginal cost.[52]

This recent analysis suggests that a regulatory commission may face a difficult trade-off between "fair" prices that are subsidy-free and "efficient" prices that are not. Thus, the presence of potentially large shared costs of production, i.e., inputs used jointly by the regulated firm to produce multiple services, creates a potential policy dilemma for the regulatory commission. The allocation of such shared costs becomes a focal point of controversy, since how such costs are assigned has major implications for both fairness and economic efficiency.

Both the importance and subtlety of this regulatory dilemma concerning fair vs. efficient prices is clearly illustrated using the concept of the "price-iso return locus."[53] To explain this useful concept, the following notation is introduced: R represents the total revenue function, py, where p is the

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[52]William J. Baumol and David F. Bradford, "Optimal Departures from Marginal Cost Pricing," American Economic Review 60 (June 1970):265-83.

[53]William J. Baumol, Dietrich Fischer, and Thijs ten Raa, "The Price-Iso Return Locus and Rational Rate Regulation," Bell Journal of Economics 10 (Autumn 1979):647-658.

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vector of output prices and y is the output vector; C represents the total cost function (excluding the cost of capital) where C = C(y); k measures the quantity of capital input; r measures the financial cost of capital; and s measures the allowed rate of return prescribed by a regulatory commission.

"Perfect" or "tight" regulation of the regulated firm by a regulatory commission implies that $(R - C)/k = s$ or

$$P^* = R - C - sk = 0 \qquad (1)$$

where P^* measures excess profit, i.e., earnings in excess of the allowed return on rate base, sk. Assuming that the prices of all inputs are fixed and given, then each of the variable components of the excess profit function in equation (1) is a function of the output vector, y, which itself is a function of the output price vector, p. As a result, the excess profit function in equation (1) may be written as

$$P^*(p) = 0 \qquad (2)$$

Equation (2) is the equation of the price-iso return locus, the locus of all output price vectors that just yield the allowed rate of return, s, to the rate base regulated firm.[84]

To simplify the exposition, suppose the regulated firm is assumed to provide only two services, say, a "competitive" service with price p^c and a "monopoly" service with price p^m.

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[84] Ibid., p. 650.

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With only two services, the price-iso return locus may be drawn as the two-dimensional graph shown in Figure 1.

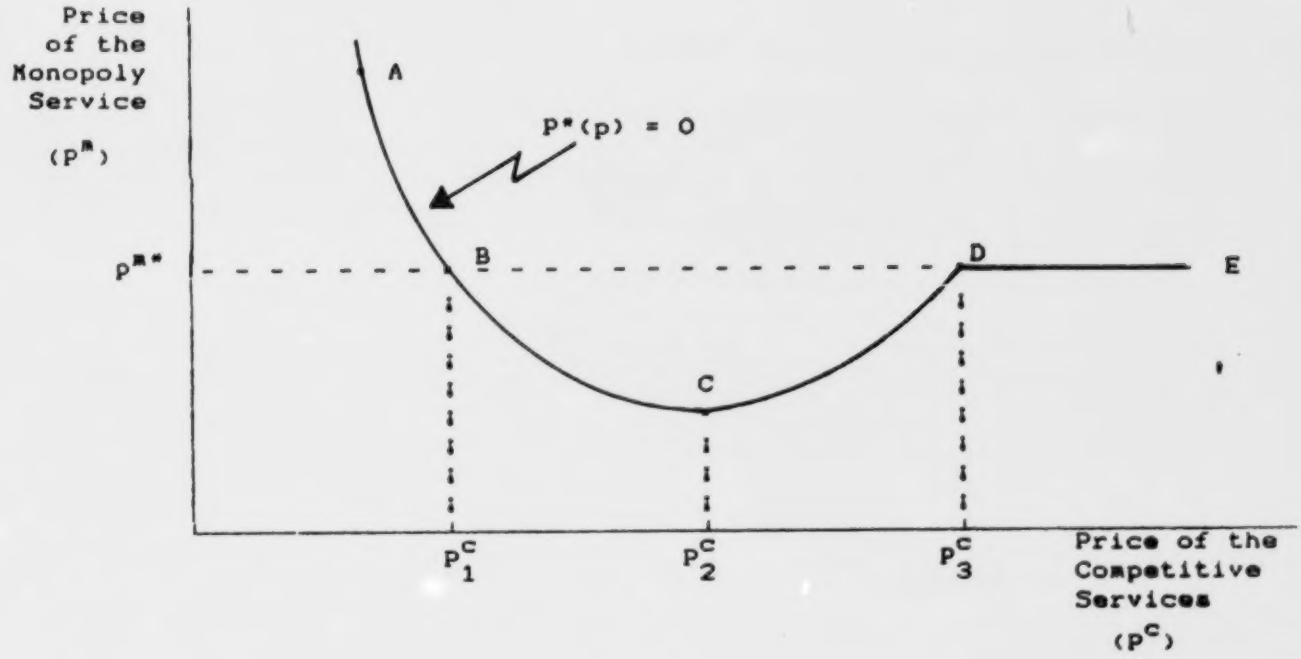

Figure 1. Price-Iso Return Locus for Two Services

Under plausible assumptions, the price-iso return locus will have the shape as drawn in Figure 1 over the relevant range. The negatively-shaped segment, AB, of the price-iso return locus is the usual case. If only the price of the competitive service is reduced, say, from P_2^C to P_1^C, the realized rate of return will fall below the allowed rate of return, s. Therefore, to keep the rate of return at the authorized level, the price of the monopoly service must be lowered. For this reason, the

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price-iso return locus has a negative shape in the region described by segment AC.

It is important to stress that the price-iso return locus will generally have a positively-sloping segment such as CD. This segment has important implications for regulatory policy, since it represents combinations of inefficient prices for the combination of monopoly and competitive services. To the right of point C or price p_2^c, any increase in the price of the competitive service results in such a loss in revenues that the rate of return decreases. Thus, segment CD implies that an increase in the price of the competitive service will also require an increase in the price of monopoly service as well to maintain the realized rate of return at (R-C)/k = s. As a result, the slope of segment CD is positive. At competitive prices higher than p_3^c, the regulated firm is simply priced out of the market. As a result, the price for the competitive service will have no further effect on the rate of return which then depends solely on the price of the monopoly service, p^m. Consequently, the price-iso return locus becomes horizontal along segment DE, since the monopoly price will be fixed at p^{m*}, a price that is sufficient to earn the regulated firm's allowed rate of return, s.[55]

The price-iso return locus suggests several policy implications pertinent to the problem of inter-service cross-subsidization. First, any price for the competitive service

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[55] Ibid., pp. 650-51.

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below p_1^c may be viewed as implying inter-service cross-subsidization. Inter-service cross-subsidization is implied because users of the monopoly service must pay a price higher than p^{m*}, the price of the monopoly service that just earns the allowed rate of return if the regulated firm only produced the monopoly service. As a result, any price of the competitive service less than p_1^c imposes a "burden" on the monopoly service ratepayers. It can be shown that Ramsey prices for both the monopoly and competitive services may require a competitive price less than p_1^c and a monopoly price greater than p^{m*}. Therefore, Ramsey prices may not be subsidy-free and, therefore, may imply inter-service cross-subsidization.

It will be difficult, however, for a regulatory commission to determine whether inter-service cross-subsidization is the result of a dominant firm strategy intended to influence market structure and retard the development of competition or the result of prices designed to achieve (static) economic efficiency while satisfying a total revenue constraint. In either event, it is also important to note that the resulting inter-service cross-subsidization is not induced in this case by the rate of return exceeding the financial cost of capital, i.e., the Averch-Johnson case. In the present case, the price-iso return locus assumes that the rate of return just equals the financial cost of capital so that excess profits are not possible.

Ramsey prices will not, however, fall in the upward sloping segment CD of the price-iso return locus. It is possible,

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however, that a regulatory commission might force the regulated firm to operate in the upward sloping segment of the price-iso return locus. For example, competitors of the regulated firm may argue that competitive price p_2^c is "too low" in terms of some alternative cost standard. If the regulatory commission requires the regulated firm to raise the price of its competitive service well above the opportunity cost of production, both monopoly and competitive service ratepayers may be harmed as the regulated firm is forced to set its prices along the upward sloping part of the price-iso return locus.

The policy implications suggested by the price-iso return locus emphasize the enormous difficulties confronting a regulatory commission when it is required to assess the fairness and efficiency of the rates set by a multiple output regulated firm that supplies both monopoly and competitive services using common or shared inputs of production. The regulatory commission must somehow determine whether the rate structure of the regulated firm involves inter-service cross-subsidization; whether this cross-subsidization is simply an attempt by the regulated firm to set Ramsey prices that maximize aggregate consumer welfare (subject to a break-even constraint) or to set profit-maximizing monopoly prices;[58] or whether the rate structure represents a

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[58]The enormous difficulties involved in distinguishing between Ramsey optimal pricing and ordinary monopoly pricing are emphasized in William A. Brock, "Pricing, Predation, and Entry Barriers in Regulated Industires" in Breaking Up Bell: Essays on Industrial Organization and Regulation (New York: North Holland, 1983), Chapter 8.

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strategic response to actual or potential competition that may be harmful to both efficient competitors and consumers.

One regulatory approach for attempting to resolve some of these difficulties involves the formulation and application of "cost tests" by the regulatory commission for assessing the lawfulness of rates of regulated dominant firms facing actual or potential competition.[57] This regulatory approach taken by itself may not be highly effective in detecting or preventing strategic dominant firm behavior. Application of any cost test, regardless whether it is based on "long run incremental cost" or fully distributed cost, requires appropriate definitions of outputs supplied by the regulated firm and rules prescribing the allocation of shared costs. Unfortunately, cost tests themselves may become the target of strategic manipulation or regulatory evasion as the regulated firm defines services and alters the ratio of service-specific to shared costs to "meet" the cost test while still pursuing corporate goals that may conflict with regulatory objectives.[58] Moreover, as the price-iso return locus suggests, cost tests may require price adjustments

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[57]A discussion of the FCC's experience with cost tests as a regulatory tool is provided in Section III of th Annenberg Study.

[58]For a rigorous analysis of the incentive to vary the ratio of service-specific to shared costs, see David Sappington and William G. Shepherd, "Sustainability, Entry Restriction, and Induced Technical Bias," Quarterly Review of Economics and Business 22 (Winter 1982):43-52. A similar problem exists where an unregulated dominant firm strategically adapts to a cost test such as that proposed by Areeda and Turner. For further discussion of this point, see A. Michael Spence, "Competition, Entry, and Antitrust Policy" in Strategy, Predation, and Antitrust Analysis, pp. 45-88.

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for both monopoly and competitive services that have the effect of protecting competitors of the regulated firm at the expense of consumers of both monopoly and competitive services.

Given some of the conceptual and practical difficulties in implementing cost tests for lawful rates, a regulatory commission may decide to prohibit cost sharing between monopoly and competitive services provided by the regulated firm. Thus, a regulatory commission may decide to impose some form of structural separation that requires the regulated firm to offer its competitive services only through a separate corporate subsidiary with little or no sharing of any common costs. Although such regulatory separation denies both consumers and the regulated firm the potential economies of joint production, i.e., "economies of scope," the regulatory commission may decide that such foregone economies represent a reasonable social cost for avoiding the potential competitive problems induced by dominant firm behavior in response to competition.[59]

In general, regulatory commissions tend to view cross-subsidization as a regulatory problem more broadly than just inter-service cross-subsidization. Most regulatory

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[59]The choice of an appropriate cost test often involves a political struggle between the regulated firm and the regulatory commission over who shall control the cost allocation process. In short, cost tests based on historical accounting data tend to give the regulatory commission somewhat greater control compared to the regulated firm. Conversely, cost tests based on alleged proxies for economic cost (such as long run incremental cost (LRIC)) tend to give the regulated firm more control than the regulatory commission over cost allocation. For further discussion, see the Annenberg Study, Section III.

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commissions recognize that cross-subsidization may involve intangible but real costs that may escape narrowly-defined cost concepts based only on observable costs. More specifically, information within any organization resembles a "public good," i.e., once the good is produced, consumption of it by multiple users neither reduces the amount available for consumption by any single user nor implies any additional costs of production. Since information is valuable and may be cheaply transmitted within an organization, such knowledge, if funded by monopoly service ratepayers but used to produce competitive services, may be viewed as an "information cross-subsidy." In markets where high rates of technological change and innovation are common, information cross-subsidy may be highly important and may represent a serious threat to the development of competition in markets the regulated firm may decide to enter. Information cross-subsidization can also be implemented through strategic movement of personnel from the regulated entity to the separate subsidiary or corporate division that provides competitive services. To offset this potential information cross-subsidy problem, a regulatory commission may impose various conduct restrictions concerning information flow and the movement of "information-intensive" personnel between or among the regulated firm's monopoly and competitive lines of business.

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c. Vertical Restrictions

Given the market power of a regulated firm, there are incentives for a dominant firm to pursue inefficient "bundling" or "tie-in" strategies, refusals to deal, and other strategic conduct intended to disadvantage competitors. Such problems are a part of a broad class of "vertical restrictions" that may occur where a dominant firm supplies a competitor with an important input used in the production of a "system" (i.e., complementary products and services such as terminal equipment and transmission service) that competes with the system supplied by the dominant firm. For example, the pre-divestiture Bell System persistently refused to provide the specialized common carriers with local exchange access to the Bell operating companies until ordered to do so by both the FCC and the courts. These new entrants combined local exchange access service and their own long distance transmission service to provide a service in competition with the Bell System's end-to-end telecommunications service. By refusing to supply the crucial "bottlereck" input, local exchange access, the Bell System could disadvantage or eliminate its competitors in the system market for long distance telecommunications service.[60]

One way to deal with such vertical restrictions is to separate the essential bottleneck service from the potentially-competitive service. Thus, structural separation that alters dominant firm incentives to disadvantage competitors is one

[60] For further discussion, see ibid.

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possible regulatory solution. Forms of regulatory separation that do not offset dominant firm incentives are unlikely, however, to alleviate the competitive problems induced by vertical restrictions. Of course, the attractiveness of a given separation framework should ultimately depend on the net effect of its perceived costs and benefits to society. Thus, a number of separation plans may, in fact, be viable regulatory prescriptions based on a particular mix of applicable social objectives and the derived net benefits of these plans.

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C. Regulatory Separation and Structural Regulation

Parts A and B of this section of the report explain why rate-of-return-rate base regulation may no longer "fit" the contemporary telecommunications industry and may, in fact, induce dominant firm behavior that is inimical to the development of competition.[61] Based on the FCC's lengthy experience coping with the problems of dominant firm behavior in response to competition, the basic regulatory strategy for offsetting potential anticompetitive conduct of regulated dominant carriers is imposing regulatory separation of varying degrees between the regulated firm's monopoly and competitive lines of business. This regulatory approach attempts to maintain the potential consumer benefits that a regulated firm may provide by offering both monopoly and competitive services. Nevertheless, regulatory separation attempts to isolate, to varying degrees, the monopoly and competitive lines of business offered by the regulated firm.

Figure 2 illustrates a "regulatory separation continuum." This continuum identifies a range of regulatory separation methods that provide varying degrees of "separateness" between competitive and monopoly lines of business. Divestiture and separation by accounting represent the polar extremes of regulatory separation. Divestiture eliminates all potential competitive problems associated with cost allocation, inter-service

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[61] The importance of the appropriate "fit" of regulation with the industry structure is emphasized by Stephen Breyer, Regulation and Its Reform (Cambridge: Harvard University Press, 1982).

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cross-subsidization, cost-shifting, and vertical restrictions by simply prohibiting the regulated firm from participating in competitive markets through its existing corporate structure. At the other extreme, separation by accounting cannot affect the incentives for anticompetitive strategic conduct by the regulated dominant firm but, in principle, makes some forms of strategic conduct easier to detect. For political and other reasons, most regulatory commissions will find neither polar case of regulatory separation attractive. Consequently, most regulatory commissions will select the form of regulatory separation from the various types of "structural" and "accounting separation" shown in Figure 2.

The separate corporate subsidiary with outside equity provides the most extensive form of regulatory separation short of divestiture. This regulatory separation, like any form of structural separation, alters dominant firm conduct by altering the internal organization of the firm. In effect, this form of regulatory separation imposes an M-form organizational structure on the regulated firm insofar as its offering of competitive services is concerned. Since M-form organization is broadly consistent with cost-minimizing behavior, this form of structural separation probably implies no major organizational inefficiencies. Moreover, limiting the regulated firm's ownership in the separate subsidiary to a minority interest alters the incentives of the separate subsidiary so that it may operate

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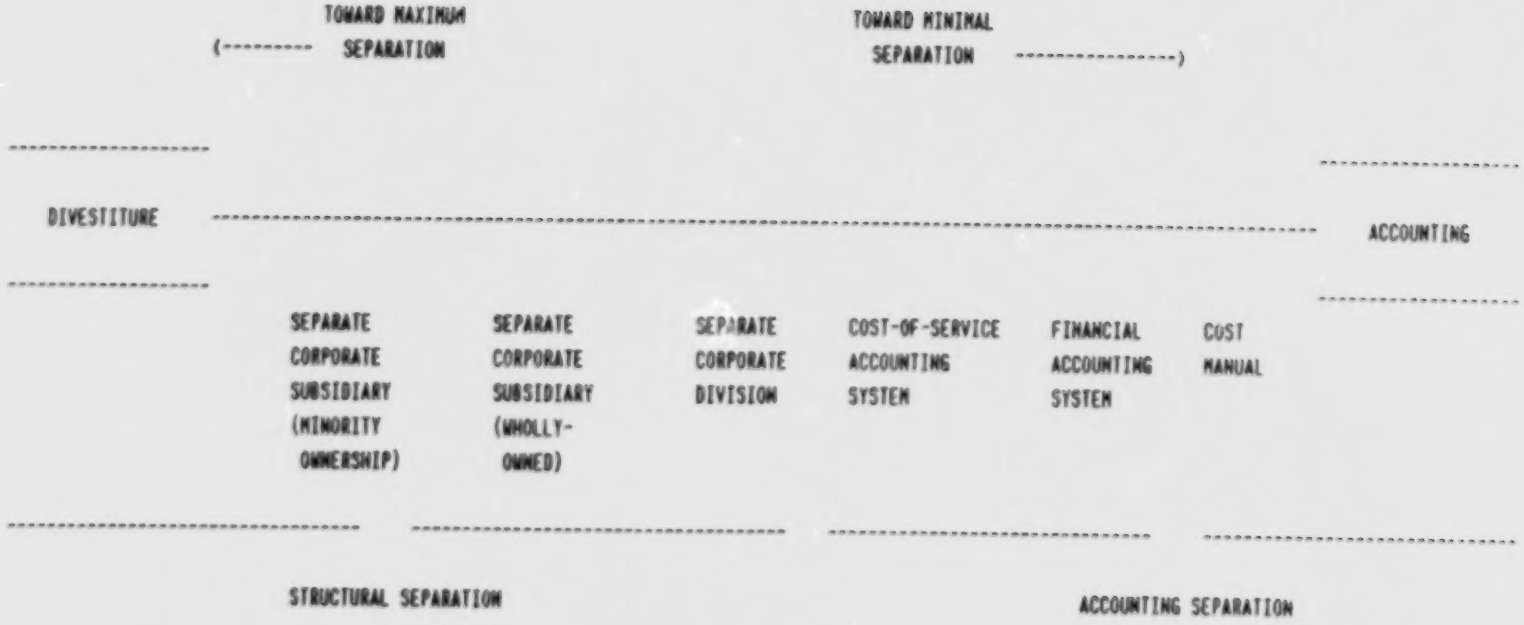

FIGURE 2. THE REGULATORY SEPARATION CONTINUUM

independently of the corporate strategy of the regulated parent firm.

The separate corporate subsidiary with minority ownership by the regulated parent firm retains many of the advantages of divestiture while still permitting the regulated dominant firm to enter competitive markets with moderate risk to actual or potential competitors and consumers. The FCC imposed essentially this form of structural separation on Satellite Business Systems (SBS), the domestic satellite carrier originally owned by the partnership of IBM, COMSAT, and Aetna Casualty and Surety Company.[62] While the FCC may have overestimated the extent of potential market dominance represented by the entry of IBM and COMSAT into the domestic satellite carrier industry, the structural separation imposed on SBS is perceived by many as effectively preventing the potential competitive problems described earlier in this section of the report.

Given its potential effectiveness, structural separation by separate corporate subsidiary with minority ownership by the regulated firm is strongly opposed by the regulated firm. The inherently political nature of regulation implies that compromise on the extent of regulatory separation is inevitable. Thus, in the United States, structural separation as actually

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[62]COMSAT recently withdrew its ownership interest in SBS. The nature and rationale of the structural separation imposed by the FCC on SBS is fully discussed in Federal Communications Commission, In the Matter of Satellite Business Systems, Memorandum Opinion, Order, Authorization and Certification, 62 FCC 2d 997 (1977).

imposed by the FCC and as proposed in draft legislation for rewriting the Communications Act of 1934 takes the form of a separate corporate subsidiary wholly-owned by the regulated dominant firm. Although this form of structural separation eliminates some aspects of strategic cost allocation by simply prohibiting major instances of shared use of facilities and services by the regulated entity and the separate subsidiary, this form of regulatory separation may have little effect on the incentives of the regulated firm to use the separate subsidiary for strategic purposes.

As practiced by the FCC, structural regulation using regulatory separation includes two basic components, namely, (1) regulatory requirements concerning the internal organizational structure of the regulated dominant firm; and (2) specific conduct restrictions concerning the behavior of the regulated firm. The FCC's "maximum separation" policy established in the FCC's Final Decision in the First Computer Inquiry ("Computer I") established the principle that regulatory separation rather than regulatory cost allocation is the appropriate regulatory response to the entry of regulated, multioutput firms in competitive or potentially-competitive markets.[63] As the FCC concluded,

> ...We believe that...[our regulatory] objectives will be achieved best by a maximum separation of

[63] Federal Communications Commission, In the Matter of Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Services and Facilities, Final Decision and Order, 28 FCC 2d 267 (1971), Docket 16979.

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> activities which are subject to regulation from nonregulated activities involving data processing.... [T]here is a potential for abuse in the form of commingling of costs associated with the rendition of [regulated] communication and [unregulated] data processing services, which can give rise to the... problems of cross-subsidization and other unfair competitive practices in the pricing of regulated and nonregulated services. Also, such commingling of operations and related costs will unduly complicate the task of effective regulation of the communication rates and services of common carriers. It will tend to obscure, if not defeat, the ready identification and allocation for accounting and ratemaking purposes of the costs associated with each activity.[64]

The Computer I decision required telephone companies that desired to enter unregulated data processing markets to do so only through a separate, although wholly-owned, corporate subsidiary. Included as part of the structural separation was the additional requirement that the separate subsidiary must be staffed with separate officers, operating personnel, and must use equipment and facilities devoted exclusively to providing data processing and other noncommon carrier services. Moreover, the separate subsidiary was required to maintain separate books of account and file separate annual and other reports with the FCC as the Communications Act of 1934 may require. Additionally, either the separate subsidiary or the parent corporation must file with the FCC all inter-corporate agreements and memoranda of any arrangements between the separate subsidiary and the parent corporation.[65]

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[64] First Computer Inquiry, Tentative Decision of the Commission, 28 FCC 2d 302 (1970).
[65] Ibid., pp. 302-303.

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In addition to these structural separation requirements, the Computer I decision also imposed certain conduct restrictions on the separate subsidiary. In particular, when the separate subsidiary obtained services or facilities from its affiliated common carrier, it must do so pursuant to the same tariff terms, conditions, and practices as are applicable to any other customer of the carrier and on terms and conditions no more favorable than those offered to other unaffiliated entities. Moreover, the parent corporation was prohibited from promoting the data processing services offered by its unregulated subsidiary. The FCC further required the separate subsidiary to permit "reasonable interconnection" with facilities of the customer.[66] Finally, the FCC prohibited a common carrier from obtaining any data processing service from its separate subsidiary; prohibited any carrier-related separate subsidiary from using the same corporate name or logo as its parent corporation; prohibited joint marketing of products and services by the separate subsidiary and the parent corporation; and precluded a common carrier from disposing of any capacity on computer systems utilized by the carrier for providing common carrier telecommunications services.[67] With some modifications, the FCC applied its maximum separation policy to AT&T in 1980, permitting AT&T to enter the market for terminal equipment and

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[66] Ibid.
[67] First Computer Inquiry, Final Decision and Order, 28 FCC 2d 273 (1971).

enhanced services on an unregulated basis through a wholly-owned separate subsidiary.[68]

The separate corporate division provides the least degree of "separateness" as a form of structural separation. Structural separation in terms of a separate corporate division introduces nothing new as a matter of principle. It is probably more difficult for a regulatory commission to monitor the conduct of a separate corporate division compared to a separate corporate entity. Nevertheless, the organizational cost of a separate division is likely to be much less than operating a separate corporate entity. In principle, such cost savings could be reflected in lower prices to consumers and greater profits for shareholders. It remains for a regulatory commission to evaluate relative benefits and costs of the varying degrees of structural separateness.

Although Figure 2 suggests that an accounting separation provides an alternative to structural separation, accounting and structural separation are, in practice, complements as well as substitutes. Every separate subsidiary or corporate division requires some form of financial and, possibly, cost accounting. From a regulatory perspective, the issue is whether such

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[68] Federal Communications Commission, In the Matter of Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), Final Decision, 77 FCC 2d 385 (1980), Docket 20828. The specific separation requirements and conduct restrictions imposed on AT&T by the Second Computer Inquiry are discussed elsewhere in this report.

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accounting systems are adequate as a form of regulatory separation without an accompanying separate organizational structure.

To some extent, the adequacy of accounting as a stand-alone form of regulatory separation depends on individual circumstances. The FCC concluded in its Second Computer Inquiry that the greater the extent of the market power or dominance of the regulated firm, the greater the potential for anticompetitive strategic dominant firm conduct and, therefore, the greater the need for more complete separation of regulated from competitive lines of business. More specifically, the FCC identified four factors that justify structural separation as opposed to less stringent regulatory separations, viz.,

> (a) a carrier's ability to engage in anticompetitive activity through control over bottleneck facilities, i.e., local exchange and toll transmission facilities, on a broad national geographic basis; (b) a carrier's ability to engage in cross-subsidization to the detriment of the communications ratepayer; (c) the integrated nature of the carrier and affiliated entities, with special emphasis upon research and development and manufacturing capabilities that are used in conjunction with, or are supported by, communications-derived revenues; and (d) the carrier's possession of sufficient resources to enter the competitive market through a separate subsidiary.[69]

Other regulatory commissions may determine that other criteria should be considered in the decision to impose structural separation on the regulated dominant firm. The FCC's criteria provide a useful starting point, however, for such an analysis.

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[69] Second Computer Inquiry, Memorandum Opinion and Order, 84 FCC 2d 72 (1981).

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If a regulatory commission determines that an accounting separation provides an adequate level of regulatory separation, then it must determine which type of accounting system is cost-effective for meeting its statutory responsibilities. As a general rule, financial accounting systems such as the Uniform System of Accounts are inadequate for dealing with many aspects of dominant firm conduct. Typically, financial accounting systems focus only on aggregate revenues and expenses and provide no information concerning service-specific costs. As the discussion of the price-iso return locus in Figure 1 points out, the regulated firm may be earning precisely its allowed rate of return (i.e., zero excess profits) but still be pursuing an inter-service cross-subsidization strategy. Such conduct would not be detected, however, by a financial accounting system. Such an accounting system may be essential, however, for meeting statuatory requirements imposed by the tax and securities laws.

Although a regulatory commission may decide to improve structural separation, it must usually consider the adoption of some type of cost-of-service accounting system for regulated services offered by the regulated firm that nevertheless force some degree of competition. The FCC has pursued two different approaches for regulating the cost-of-service of regulated dominant firms, viz., (1) an integrated financial and cost accounting system and (2) regulatory cost accounting or "cost manual" regulation. Although the FCC proposed to develop an integrated financial and cost accounting system in 1978, it has

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abandoned this approach as unworkable.[70] The FCC's cost manual approach for regulating the allocation of the interstate revenue requirement for AT&T's interstate transmission services is the culmination of decades of regulatory proceedings attempting to regulate AT&T's pricing response to competition.[71] Details cocerning cost manual regulation cannot be considered here. Suffice it to say that workable cost manuals can be developed and implemented by regulatory commissions. Like structural regulation, the effectiveness of such regulation in detecting and preventing strategic dominant firm behavior remains uncertain.

As an additional option, a regulatory commission may simply require separate books of account for both regulated and unregulated lines of business together with "guidelines" for allocating shared costs. This approach largely delegates the design of an accounting system to the regulated firm. The books of account would presumably remain subject to periodic audit by the regulatory commission. This form of regulation is clearly the weakest and affords the regulated firm much latitude to implement and conceal strategic behavior.

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[70]See Federal Communications Commission, In the Matter of the Uniform System of Accounts and Financial Reporting Requirements for Telephone Companies (Parts 31, 33, 42 and 43 of the FCC's Rules), Notice of Proposed Rulemaking, 70 Fcc 2d 719 (1978), CC Docket 78-196. For a critical discussion of the FCC's decision abandoning this approach toward revising the Uniform System of Accounts, see David Chessler, "Information Requirements in a Competitive Environment," in Diversification, Deregulation, and Increased Uncertainty in the Public Utility Industries, ed. Harry M. Trebing (East Lansing, Michigan: Institute of Public Utilities, Michigan State University, 1983), pp. 293-361.

[71]An extensive discussion of the FCC's experience with costing methodologies is provided by the Annenberg Study, Section III.

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In conclusion, the extent of monopoly power of the regulated dominant firm and the likelihood of the rapid development of competition stimulated by factors beyond the control of a regulatory commission (such as divestiture, offshore competition, or sudden changes in technology) are major factors that should determine the extent of regulatory separation imposed by a regulatory commission. Nevertheless, political considerations may tend to dominate the decision. Based on experience in the United States, structural regulation using the wholly-owned corporate subsidiary has achieved much popularity as an attractive "compromise" on the extent of regulatory separation. Some of the important implications of this compromise are considered in the next section.

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D. Structural Regulation: A Critical Assessment

Structural regulation is an innovation in the theory and practice of telecommunications regulation. It is a response to new technologies, dynamic market boundaries, and changing attitudes about the long run structure of the industry. It is now widely acknowledged that a "knee jerk" application of traditional public utility regulation to all telecommunications markets, regardless of their competitiveness, is poor public policy and creates incentives for distortions in market performance. Structural regulation which requires a regulated dominant firm to separate its monopoly and competitive lines of business represents an alternative to traditional rate-of-return-rate base regulation.

Structural regulation, despite its popularity at the FCC, remains, however, a controversial instrument of the social control of industry. Why structural regulation remains controversial deserves emphasis. Although Figure 2 portrays a "smooth" continuum of alternative forms of regulatory separation, the continuum is actually discontinuous in terms of probable effectiveness. Only divestiture of competitive lines of business from the regulated firm or a separate corporate subsidiary with outside equity for offering competitive lines of business changes

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incentives of the regulated dominant firm.[72] All other forms of structural and accounting separation leave dominant firm incentives intact. Consequently, it seems reasonable to expect the profit-maximizing dominant firm to coordinate the corporate strategies for all organizational units within the firm. It is apparently both unrealistic and illogical to believe that a wholly-owned separate subsidiary would be permitted to pursue corporate goals that were inconsistent with those of the corporate parent. Although adding a separate board of directors to the organizational structure of the separate corporate subsidiary may appear to enhance the independence of the subsidiary, it still seems unrealistic to think that the corporate parent would long tolerate a board of directors of a wholly-owned subsidiary that insisted on pursuing corporate goals inconsistent with those of the parent.

Given this fundamental defect in the wholly-owned corporate subsidiary as a form of regulatory separation, the wholly-owned separate subsidiary may be little more than an accounting separation made to appear as more stringent structural separation.[73] Nevertheless, the elimination of shared costs

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[72]Of course, prohibiting the dominant firm from entering any competitive market would also effectively eliminate the potential competitive problems associated with dominant firm conduct. This policy seems extreme, however, and denies consumers the potential benefits of a new competitor and assumes that any regulatory mechanism will totally fail to deter dominant firm anticompetitive conduct.

[73]It is this attribute of the wholly-owned separate subsidiary that accounts for its political acceptability: it looks like a constraining form of structural separation but functions more like a form of accounting separation.

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between competitive and monopoly lines of business may justify the imposition of a separate subsidiary even though incentives of the dominant firm are unchanged. Thus, a regulatory commission should attempt to determine whether the benefits of avoiding the problem of shared costs offset both the costs of structural separation and the possible misperception by both competitors and consumers that the wholly-owned separate subsidiary provides a greater extent of "separations" than it does. If binding structural separation is not possible politically, it may be poor public policy to require the regulated firm to maintain the appearance of such separation. Unfortunately, there is not much to be learned from the American experience concerning this important point.

Although imposing regulatory separation permits partial deregulation of the regulated firm's competitive services, structural regulation still implies substantial regulatory oversight. Consequently, implementing structural regulation does not necessarily imply any reduction in the level of regulatory activity; rather, it implies a change in the nature of regulatory activities. Rather than determining the allowed rate of return for the separate subsidiary, the regulatory commission must monitor compliance with the conduct restrictions, audit intercorporate transactions, and otherwise monitor compliance of the separation requirements. To the extent that the regulatory commission continues to apply traditional rate-of-return-rate base regulation to the unregulated services

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provided by the regulated firm, the regulatory commission may find that it needs increased staff and operating budgets to implement structural regulation.

Moreover, little is known about the problems of administering structural regulation on a long term basis. Little is also known about regulatory distortions induced by structural separation, such as losses in potential economies of scope or economies of vertical integration. Although structural separation is supposed to improve the ability of a regulatory commission to detect anticompetitive dominant firm behavior, the FCC has had only a limited opportunity to discover the effectiveness of structural separation in practice. The AT&T divestiture in 1984 radically altered AT&T's corporate structure and eliminated a number of the competitive problems that structural regulation was intended to address. Subsequently, the FCC initiated a rulemaking that proposes to eliminate all structural separation imposed on AT&T by the Second Computer Inquiry Final Decision for the sale of terminal equipment.[74] As a result, other regulatory commissions will be unable to gain much insight from the FCC's experiment with structural regulation.

Apart from controversies surrounding the potential effectiveness of structural regulation, there remain controversies concerning the significance of the competitive problems structural

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[74] "FCC Proposal Would Remove Structural Separation Conditions From AT&T's Provision of CPE (CC Docket 85-26)," FCC news release issued February 1, 1985, report #18231.

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regulation is intended to solve.[75] More specifically, structural regulation is intended to deter and detect dominant firm strategic behavior. Some individuals, however, question both the reality or significance of dominant firm strategic behavior. In particular, advocates of the Chicago School view of firm behavior tend to discount the significance of strategic behavior. As Oliver Williamson has observed, ". . . strategic behavior is not a concept that Chicago has been at ease with."[76] From a Chicago perspective, structural regulation may simply represent a costly form of government intervention that impedes the competitive process while attempting to deal with only hypothetical problems. Thus, any form of regulatory separation imposed by government may be both unnecessary as well as wasteful.

While the Chicago view is probably extreme, it remains true that some aspects of anticompetitive strategic behavior resemble the ordinary workings of vigorous competitive rivalry.[77] Nevertheless, a careful review of the FCC's experience in regulating AT&T over the years should convince even the most skeptical that strategic conduct is more than hypothetical.

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[75]There also remain numerous implementation problems surrounding structural regulation. Such problems include the valuation of assets transferred to the separate subsidiary and the effect of the financing of the wholly-owned separated subsidiary on the financial cost-of-capital of the regulated entity. These problems are not considered here.

[76]Oliver E. Williamson, "Symposium on Antitrust Law and Economics: Introduction," University of Pennsylvania Law Review 127 (April 1979):918.

[77]For a thorough discussion of this point, see Franklin M. Fisher, John J. McGowan, and Joen E. Greenwood, Folded, Spindled, and Mutilated: Economic Analysis and U.S. v. IBM (Cambridge: MIT Press, 1983).

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Thus, it seems reasonable to conclude that strategic conduct is likely to be a problem in the telecommunications industry, although it remains unclear whether structural separation short of divestiture or a separate subsidiary with outside equity represents an adequate or cost-effective response.

In conclusion, much remains to be learned concerning the effectiveness of structural regulation. There remains little doubt, however, that the competitive problems such regulation addresses merit the careful attention of both regulatory and antitrust authorities.

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SEPARATE SUBSIDIARIES AND STRUCTURAL SEPARATION IN UNITED STATES TELECOMMUNICATIONS: CONCEPTUAL ANALYSIS, APPLICATIONS, AND PROGNOSIS

SECTION II

STRUCTURAL SEPARATION AND THE UNITED STATES

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II. STRUCTURAL SEPARATION AND THE UNITED STATES

The U.S. experience with the notion of structural separation and the "separate subsidiary" concept as regulatory tools essentially traces its origins to policies instituted by the Federal Communications Commission (FCC) during the earlier 1970s. The purpose of this section is to review the history of these and other such decisions, to indicate the important trends that are evolving out of them, and to discuss the relevant legal concepts.

A. FCC Application Of the Separate Subsidiary Requirement

The Commission has issued a number of decisions in recent years ordering the establishment of separate subsidiaries to insure "maximum separation," i.e., requiring that in certain situations communications common carriers form separate corporate entities for the provision of particular services.

Before reviewing the FCC's experience in this regard, the Commission's objectives with respect to structural separation remedies will be examined below.

1. Objectives In Seeking Establishment Of Separate Subsidiaries

a. Overview

The FCC regulates wire and radio communications to ensure that services are available at reasonable charges. Under Title II

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of the Communications Act, the FCC, as noted earlier, has jurisdiction over interstate and international common carrier communications services. The FCC controls market entry, authorizes the acquisition of facilities, ensures that the rates are just and reasonable, resolves disputes between carriers, sets industry standards, etc. The overall objective is to ensure that the public interest is well served.

Not all common carriers are subject to the same degree of regulation. Some markets are clearly more important in terms of overall impact on the public, and these markets should receive the greatest attention. In addition, some markets are served by several competing firms. Competition may create a number of presumptions, for example, that investments are prudent or that rates are not unreasonably high. Firms with little market power do not require the same degree of scrutiny that monopoly firms do. Nevertheless, the public interest may still require sufficient FCC action to ensure that universal and adequate quality of service are maintained, and that there is no destructive competition.

Large firms may have substantial market power in various common carrier markets. In the absence of public regulation, these firms have substantial control over the type of facilities used by the industry, the types and qualities of services offered, and the prices charged. Such firms can enter other markets. For example, a communications common carrier could vertically integrate and provide itself network equipment, or could enter

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a market which relies heavily on underlying communications services. The firm can also conglomerate, and enter markets unrelated to its common carrier communications services. In any case, the firm's additional activities may have a strong impact on its common carrier operations. Costs may be passed on to monopoly ratepayers, particularly if some facilities are jointly used. Affiliates may get preferential treatment. Capital needed for communications may be diverted to other uses. The public interest can be harmed in these and other ways.

Under Title III of the Communications Act, the FCC has jurisdiction over those markets that have a significant impact on any Title II carrier operation. As a result, the FCC may regulate some activities which are not normally considered to be common carrier communications. Unfortunately, such regulation may hinder competition in markets that should be competitive. One solution might be to bar monopoly common carriers from participating in competitive markets. This might, however, eliminate particularly well suited competitors from the market. AT&T, for example, believes that its experience and organization will make it a particularly efficient provider of enhanced communications services. Without AT&T, there may not be enough competition to ensure that a satisfactory range of enhanced services is offered at the lowest prices.

An alternative to full regulation is to require monopoly carriers to offer competitive services only through a separate subsidiary. Under separation guidelines, the interactions between

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the parent and subsidiary are limited and open to scrutiny. In theory, this arrangement protects the monopoly ratepayers and ensures that monopoly power is not transferred to competitive markets.

b. Separation To Improve Regulation In Common Carrier Markets

Imposition of structural separation can make regulation more effective. Separation allows the regulators to allocate the major proportion of their effort to communications markets where significant market power exists. Separation also deters carrier circumvention of important regulatory policies. Thus, the separate subsidiaries requirement can help to ensure that the public gains maximum benefit from the regulatory effort expended.

In the absence of structural separation, the regulator may be faced with extensive joint operations. The regulator must determine the degree to which monopoly services are responsible for joint costs, and ensure that the proper amount is charged. Separating costs may be extremely difficult if noncarrier services are intertwined and blurred with common carrier services. Having services intertwined can also force regulation on services that would otherwise not be regulated. For example, carriers have traditionally offered telephone handsets as part of their services. Prior to the advent of the FCC equipment registration program, this arrangement made

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telephone handsets a necessary part of the monopoly service rate base.

With separate subsidiaries, the corporate structure embodies a line of demarcation. In theory, there will only be limited and clearly defined instances of joint operations. Thus, the monopoly services generally will not contain elements which support competitive activities. Auditors can immediately determine whether or not expenses are attributable to a carrier's monopoly services. Furthermore, separated services or products that do not have a significant communications component would no longer have to be regulated.

The separate subsidiary structure also highlights all interactions between monopoly carriers and their competitive affiliates. Transaction records can be used to verify that all exchanges are accounted for at appropriate costs, and that no cross-subsidization occurs. In some cases, the competitive subsidiary will be a substantial user of parent-provided common carrier services. Company records can be used to help determine whether the subsidiary and its competitors had equal access to common carrier services.

In addition, structural separation provides protection for proprietary information. Monopoly service customers must provide certain information to telephone companies, and these companies maintain customer use records. Customers may wish that this information not be used for purposes unrelated to monopoly service. If competitive services are offered only

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through a separate subsidiary, it is possible to monitor the treatment of proprietary customer information. Similarly, the company may have substantial proprietary information regarding competitive services. Since all joint operations come under the purview of regulation, substantial competitive market information must be reviewed. Some of this information may, as a result, be made public. If competitive services are offered through separate subsidiaries, regulators could more easily avoid the release of information which competitive sellers normally consider to be privileged.

c. Separation to Maintain Competition and Preserve Corporate Initiatives

In addition to improving regulation, a fundamental objective which the FCC has pursued with intensity in recent years is the promotion and maintenance of competition where it appears feasible in telecommunications markets. A critical concern underlying the Commission's attempts to foster such corporate rivalries has been the dispersal of market power.

This direction clearly represents a significant departure from traditional FCC policies. In particular, as recently as the mid-1960s, monopoly, or near monopoly, with single firm dominance, was still the prevailing structure for the domestic sector of the industry, and tight oligopoly and monopolistic structures existed in the international segments. Domestically, three basic types of service existed: 1) telephone service;

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2) message telegraph and teletypewriter exchange service (telex or TWX); and 3) private line services. The Bell System and the independent telephone companies were the sole authorized suppliers of telephone service, both long distance (e.g., message telephone service, or MTS; and wide-area telephone service, or WATS) and local. Western Union was granted a monopoly in the provision of public telegraph messages, and was soon to gain (in part, through acquisition of TWX from AT&T) a monopoly position in the market for teletypewriter exchange service. Only in the realm of private line services was "competition" permitted, and there the AT&T-Western Union lopsided duopoly offered competing interstate lines for high-volume communications users, mainly in the area of telegraph grade and voice grade services. Certain large users could (after 1959) utilize private microwave systems as alternatives, so the duopoly did not completely foreclose the market. The nature of the industry's structure, i.e., the paucity of competition, was not surprising in view of the straightforward, limited, and homogeneous markets involved. The telephone and telegraph sectors were viewed as natural monopolies which, accordingly, required only one supplier in each instance for maximum efficiency. Since the private line market was largely composed of these two services, which were needed in substantial volumes by business firms and other institutions, the exclusive participation of the giant AT&T and much smaller Western Union in this less lucrative business was neither unpredictable nor a case of regulatory imprudence.

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On the international side, the record (data) carrier business in the mid-1960's was conducted by four companies: ITT Worldcom, RCA Globcom, Western Union International, and (to a much smaller extent) TRT Telecommunications. Voice service by undersea cable was the sole province of AT&T, and Comsat as an "authorized user" was the monopoly wholesaler of satellite circuits.

Subsequently, the Bell System, Western Union, the international record carriers, and the rest of the participants in the U.S. telecommunications arena experienced a period of substantial and turbulent change. This unprecedented upheaval in the operating environment was fueled by technological imperatives and sanctioned by new directions in regulatory rulings (especially FCC) and judicial determinations. The pre-Carterfone days of omnipresent monopoly markets have been succeeded and apparently superseded by a new era of competition in the terminal equipment, enhanced services, and intercity service markets.

With the new pro-competition policies has come the need to guard against potential marketplace abuses such as cross-subsidization and predatory pricing. A number of functional areas have been of particular concern in this regard. One such focal point is research and development (R&D), where costs may be misallocated when shared among affiliated companies that participate in monopolistic as well as competitive markets. Regulatory apprehensions have arisen in this area because of the magnitude of these costs (e.g., in the Bell System) and the perceived opportunity for undercosting competitive services,

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especially in the realm of software R&D (e.g., GTE and GTE Telenet).

Another area of significant concern has been the marketing of both services and products by a single firm. Joint marketing and advertising activities by Bell affiliates that straddle markets with and without competitive characteristics have been generally prohibited by the FCC. An exception is institutional advertising, which is permitted on a joint basis if the messages are not product or service-specific in nature. The marketing/advertising function is constrained because of concerns similar to those regarding R&D sharing, i.e., the dollar magnitudes involved and the relative potential for abuse.

Equipment manufacture and procurement are two related functions which may also be subject to anticompetitive abuses. FCC misgivings have been expressed in several proceedings. (See, for example, Docket 19129, Phase II and the follow-up inquiry: In the matter of Bell System procurement practices, RM 3381, Docket No. CC-80-53; the notice of inquiry on the AT&T license contract agreement and other intrasystem arrangements, Docket No. CC-80-742; and the decision on Bell's procurement practices in its application to supplement its facilities with a lightguide cable in the "Northeast Corridor," File No. WPC-3071, FCC 80-698). Concerns have centered on the potential for buyers and sellers under the same corporate roof to deal on a basis which is less than arm's length.

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Besides attempting to reduce market power, the Commission has emphasized the importance of generally removing obstructions to market entry. Access to a variety of communications markets has been significantly facilitated, with entry eased in such arenas as international voice and record traffic, terminal equipment, enhanced services, and even MTS/WATS-equivalent (intercity) services. Encouraging innovation, productive efficiency, and lower prices have been additional FCC goals whose attainment has been sought through policies promoting competition. Relative freedom to enter a market has been regarded as an important requirement for reaching such goals.

As we have noted, the separate subsidiary concept was created in the 1970s to be a vehicle for fostering fair, arm's length competition for the participants in a given communications marketplace. An alternative to more radical prescriptions such as divestiture and denial of mergers, the separate subsidiary is a compromise solution designed to balance the often-competing objectives of preventing anticompetitive activities and preserving corporate incentives and prerogatives. Hence, structural and accounting safeguards have been instituted over the years in a number of instances, international and domestic, and in a variety of tailored combinations in the attempt to protect the interstate ratepayers' interests. The next section examines the policies of the FCC that have evolved in this regard during the past two decades.

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2. Early History

a. First Computer Inquiry

In the First Computer Inquiry (Computer Use of Communications Facilities, 28 FCC 2d 267 (1971), the Commission sought the maximum separation of activities subject to regulation from nonregulated activities involving data processing. In general, the Commission believed that without appropriate safeguards, the provision of data processing by communications common carriers could adversely affect the statutory obligations of these carriers to provide adequate communications services under reasonable terms and conditions, and impair effective competition in the sale of data processing services. More specifically, the Commission was concerned with the following:

1) that the sale of data processing services by carriers should not affect the provision of efficient and economical common carrier service;

2) that the costs related to furnishing such data processing services should not be passed on directly or indirectly, to users of common carrier services;

3) that the revenues derived from common carrier services should not be used to subsidize any data processing service; and,

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4) that the furnishing of such data processing services by carriers should not inhibit free and fair competition between communications common carriers and data processing companies or otherwise involve practices contrary to policies and prohibitions of the antitrust laws.

To insure maximum separation, the Commission required in this case that any communications common carrier wishing to provide data processing services be permitted to do so only through separate affiliates or subsidiaries utilizing separate books of account, separate officers, separate operating personnel, and separated equipment and facilities devoted exclusively to the rendition of data processing services. In addition, the carrier was not permitted to engage in the sale or promotion of data processing activities on behalf of its data processing affiliate; the data processing affiliate was prohibited from using the name of the related carrier; and, the rule concerning the use of name and symbols of the affiliated carrier was further directed toward any holding company owning or jointly owning a common carrier with interest, directly or indirectly, in a data processing affiliate. A provision was also included in the decision prohibiting a common carrier from obtaining any data processing services from its data affiliate. This provision was included to prevent the subsidization of the data processing affiliate, with the common carrier customers absorbing the costs

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of inflated data processing charges through an extended rate base; to prevent any substantial impact on a competitive market in which hundreds of small firms would be able to obtain business from a large customer; and to prevent any significant burden on the Commission to police such arrangements. Finally, the Commission, in its decision, precluded a common carrier from disposing of any capacity on computer systems utilized by that carrier for the provision of common carrier communications services.

b. Subsequent Separation Orders

The Commission has issued several other decisions since the First Computer Inquiry requiring the establishment of separate corporate entities to provide for maximum separation. (U.S. Transmission Systems, Inc., 48 FCC 2d 859 (1974); ITT Domestic Transmissions, Inc., 62 FCC 2d 236 (1976); Communications Satellite Corporation, 45 FCC 2d 444 (1974); CML Satellite Corporation, 51 FCC 2d 14 (1975); RCA Global Communications, 56 FCC 2d 660 (1975); and Satellite Business Systems, et. al., 62 FCC 2d 997 (1977); GTE-Telenet Merger, 72 FCC 2d 111 recon., 72 FCC 2d 516, recon. denied, 84 FCC 2d 18 (1979); Comsat Study, 77 FCC 2d 564 (1980); AmSat-Fairchild-Continental Joint Venture; 80 FCC 2d 254 (1980); Second Computer Inquiry, Tentative Decision, 72 FCC 2d 358 (1977), Final Decision, 77 FCC 2d 384 (1980) (Final Decision), reconsideration, 84 FCC 2d 50 (1980), further reconsideration, 88 FCC 2d 512 (1981), aff'd sub. nom., CCIA

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v. FCC, 693 F. 2d 198 (D.C. Cir. 1982) cert. denied, 1035. Ct. 2109 2109 (1983). In many of the early cases, an established international carrier petitioned the Commission for authority to provide a new service in the domestic market. Before such a service could be offered, however, the Commission required that the international carrier form a separate subsidiary to provide the service, and that the subsidiary be subject to several conditions. In the more recent cases, the Commission was petitioned to allow a domestic carrier to acquire another domestic firm and provide additional communications services. Again, the Commission required the establishment of a separate subsidiary subject to several conditions.

The major reason for the requirement of separate corporate entities was to insure that the established carriers not create the potential for unfair competitive practices, such as underpricing of new services as a result of cross-subsidization from the old ones. For example, the Commission wanted to assure itself that RCA Globcom, an established international carrier, would not provide cross-subsidies to RCA's domestic satellite activities, and thus give these activities an unfair competitive advantage vis-a-vis other potential domestic satellite entrants. Additionally, the Commission wanted to assure itself that in no way would the proposed domestic service affect the international operations. Again, by way of example, in the Comsat case, the Commission wanted assurance that Comsat's venture into the domestic satellite market, through its separate corporate

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entity, Comsat General, would in no way impair Comsat's ability to discharge its statutory responsibilities with respect to its INTELSAT activities.

In addition to simply requiring the established carriers to form separate subsidiaries for their new operations, the Commission set forth several conditions under which those subsidiaries should operate. A discussion of each of these cases, with a list of the relevant conditions, is presented below.

(1) U.S. Transmission Systems, Inc.

USTS, a majority of whose stock is held by American Cable and Radio Corporation (AC&R), which in turn is a subsidiary of ITT, was formed to offer a full variety of interstate services. The major concern of the opposition parties was that entry of an ITT affiliated firm would have an adverse impact on competition in the specialized carrier area, plus the fact that ITT, an international carrier, was entering the domestic market. In this particular case, while the Commission recognized that there were several areas in which abuses could occur, it did not expect that they would occur. Consequently, the only two conditions required in this case were the following:

1) USTS was required to submit copies of all agreements between itself and Transco (Transco being a gas transmission company with capital ownership in USTS

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and with whom USTS has an easement agreement) concerning the use of Transco's property and facilities, and to justify its financial reimbursement to Transco for such use as it makes of Transco's facilities.

2) USTS was prohibited from interconnecting with affiliated international carriers for the provision of international service pending the resolution of Docket No. 19660. (Such interconnection would, in effect, give ITT additional gateway cities.)

(2) ITT Domestic Transmission Systems

ITTDTS was formed as a subsidiary of ITT to provide specialized common carrier service. In this case the Commission was concerned about ITTDTS engaging in unfair competition and enjoying cross-subsidization from other ITT carriers. To insure against these potential abuses, the Commission attached the following conditions to the approval of the application:

1) ITTDTS is required to operate as an independent carrier in the provision of services and in its marketing, accounting, customer relations and operating departments separate and apart from other ITT carrier subsidiaries.

2) ITTDTS is required to maintain separate accounting records in accordance with FCC rules and make those

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records available to the FCC for examination, with full disclosure of costs and revenues attributable to ITTDTS services.

3) ITTDTS is not permitted to share management, maintenance, or other service personnel with other ITT affiliates.

4) ITTDTS is required to keep confidential all proprietary information regarding customers.

5) ITTDTS is not permitted to render service to any entity affiliated with ITT when total hours rendered to those entities exceed the total hours rendered to nonaffiliated entities.

6) ITTDTS is not permitted to share physical space with other ITT carriers' affiliates without approval of the Commission.

7) ITTDTS is required to purchase equipment and transmission facilities for its network on an arm's length basis.

8) ITTDTS is required to report various technical,

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operating and financial data to the Commission every two years.

9) ITTDTS is prohibited from interconnecting with affiliated international carriers for the provision of international service pending the resolution of Docket No. 19660.

(3) Communications Satellite Corporation

The Commission required Comsat to form a separate corporate entity to engage in any domestic satellite venture and in any other nonINTELSAT related ventures. Comsat General was formed and filed the appropriate applications for a domestic satellite. The Commission approved the application, on the condition that Comsat make a showing that the proposed financial plan for Comsat General would effectively limit the extent of Comsat's liability and insulate Comsat's INTELSAT related activities so that its ability to discharge its statutory responsibilities with respect to INTELSAT would remain unimpaired. The Commission required Comsat to submit a revised financing plan providing for the appropriate financial independence of Comsat General in a manner which would establish realistic definitive limits on the amount of investment to be made by Comsat in Comsat General and on the liabilities, direct and indirect, undertaken by Comsat with respect to Comsat General. Comsat filed a plan to:

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1) Limit effectively Comsat's liability with respect to the activities of Comsat General;

2) Maintain an adequate financial position to insure viability of INTELSAT;

3) Utilize productively the assets of the parent not required for meeting the requirements of INTELSAT;

4) Provide adequate funding for Comsat General in its formative years;

5) Provide an appropriate credit base for the subsidiary upon which external financing could be obtained.

The Commission accepted Comsat's proposal, and added the following conditions:

1) Comsat General is to be a separate corporate entity.

2) Comsat and Comsat General are to have separate officers and employees and separate offices to insure each company performs its own corporate functions in the provision of service, operations, maintenance, accounts and billing.

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3) All intercorporate dealings are to be at arm's length insuring that all arrangements are fair and reasonable, with no overreaching by either party.

4) Each company must show, as requested, and based on costs, that terms and conditions of any transactions or arrangements be comparable to that which would have been secured elsewhere.

5) No subsidy is permitted between Comsat monopoly services and Comsat General competitive services.

6) Comsat must transfer to Comsat General all noncash assets which are properly allocable to the activities being transferred to Comsat General.

(4) CML Satellite Corporation

The Commission in this decision denied the proposal for Comsat General and IBM to jointly own CML Satellite Corp. At the same time, however, they did not preclude IBM from entering the domestic satellite area, but stated that if IBM did enter the domestic satellite market, the following conditions would have to be met:

1) IBM would have to establish a separate corporate entity (similar to Comsat and Comsat General arrangement).

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2) All intercorporate dealings between parent and subsidiary would have to be at arm's length, insuring that all arrangements are fair and reasonable and there be no overreaching by either party.

3) Any domestic satellite system in which IBM participates would be prohibited from engaging directly or indirectly in furnishing data processing services except as permitted under Section 64.702(c) and (d) of the Rules.

4) The subsidiary must permit the interconnection of other common carriers.

5) The subsidiary must permit interconnection of customer-provided equipment and provide details of arrangements for such provisions.

6) The IBM parent would be prohibited from engaging in the sale and promotion of domestic satellite service, both at the developmental and operational stages.

(5) RCA Global Communications

In this decision, which dealt with RCA Globcom's proposal for a domestic satellite system, the Commission was concerned with the potential adverse effect these activities would have on RCA Globcom's international operations, as well as the possible

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anticompetitive effects on the domestic satellite market. To allay these concerns, the Commission imposed the following conditions:

1) RCA must establish a separate corporate entity for domestic satellite operations.

2) RCA Globcom's involvement in domestic satellite communications is to cease with the establishment of a new corporation.

3) RCA Globcom is to transfer to the new corporation all noncash assets which are properly allocable to the domestic satellite venture, including deferred cost which RCA Globcom has incurred on behalf of the domestic satellite program.

4) RCA Globcom shall have no interest in the domestic corporation, including any interest in stocks or other assets.

5) RCA Globcom and RCA Alascom are prohibited from making any contributions to fund the new corporation.

6) The domestic satellite operation is to have separate

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officers, employees, and offices to perform various services.

7) All intercorporate dealings must be at arm's length, insuring that all arrangements are fair and reasonable and there is no overreaching by either party.

8) RCA Globcom and RCA Corp. must submit plans for transferring all of RCA Globcom's interest in domestic communications activities. Also, they must submit plans as to the financing and structure of the separate corporation.

9) The subsidiary is prohibited from interconnecting with affiliated international carriers for the provision of international service pending the resolution of Docket No. 19660.

(6) Satellite Business Systems, et al.

In this case, the Commission approved the application of Comsat General, IBM, and Aetna to provide for domestic satellite service (this was the follow-up to the CML case), and set down the following conditions (in addition to those already established in the CML case):

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1) Complete separation of employees, officers, and directors of each of the three partners from each other;

2) Complete separation of employees, officers, and directors of each of the parent organizations from each other;

3) No employee, officer, or director of any parent organization is permitted to serve as employee, officer, or director of any other parent organization's subsidiary;

4) Complete separation of employees, officers, and directors of SBS, the three partners, and their parents from all other communications common carriers with whom SBS may compete, including AT&T and its subsidiaries;

5) Prohibition of any joint or cooperative presentation by IBM and SBS.

(7) GTE Telenet

In May, 1979, the Commission approved the acquisition of Telenet Corporation, a provider of augmented data and basic transmission services, by General Telephone and Electronics

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Corporation (GTE), at that time the nation's second largest telephone company and a provider of a variety of telecommunications services and products. GTE-Telenet Merger, 72 FCC 2d 111 (1979); recon., 72 FCC 2d 516 (1979), reconsideration denied 84 FCC 2d 18 (1979). In evaluating the merger, the Commission weighed the potential for cross-subsidization, collusion with AT&T, and other anticompetitive behaviors against potential benefits to the public. The Commission concluded that the public would only benefit on balance if 10 protective conditions were placed on the merger. These conditions were refined and modified on a number of occasions, in part as a result of a staff audit. Order FCC 81-59, released February 18, 1981. The safeguards as they were then revised are listed below.

Condition 1: Accounting and Reporting Requirements

Telenet shall retain its separate corporate structure. Telenet shall maintain an independent accounting system in accordance with FCC requirements, fully disclosing all actual costs and revenues. Telenet shall maintain quarterly records of all financial transactions with affiliates.

Condition 2: Separation for Permitted Interactions

a) No GTE affiliate besides Telenet (except Hawaiian Telephone Company) shall provide or market augmented data services in this country. GTE carriers may only

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participate in other companies' augmented data services by providing tariffed services.

b) All financing of Telenet shall be provided directly by the GTE holding company or by unaffiliated sources.

c) Telenet must bear the costs of administrative services provided by affiliates. Telenet shall only receive proprietary R&D results from affiliates outside of GTE - Communications Network Systems (CNS) if Telenet prefunded the work by contract. Telenet shall obtain all other nonproprietary or network design information, services, and equipment from nonCNS affiliates on a nondiscriminatory and arm's length basis.

Condition 3: Prohibited Interactions

Telenet shall not directly or indirectly exchange customer proprietary information, jointly use physical space, share employees or officers, or obtain nonadministrative services from GTE companies outside of CNS in the following functional areas:

a) Marketing and customer sales engineering--except for institutional advertising which is neither product nor service specific.

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b) Software or firmware development for Telenet's network or customer premise equipment--except for providing equipment containing generic software that is routinely sold to unaffiliated customers.

c) Operations, installation and maintenance--except that affiliates other than telephone operating companies, GTE Service Corporation, and GTE Satellite Corporation may install, maintain, and operate Telenet customer premise equipment.

Subsequently, the Commission removed the merger conditions. Memorandum Opinion and Order, CC Docket No. 80-197, FCC 82-352, released August 10, 1982. The structural separation requirements were dropped because (1) GTE Telenet's primary market, "augmented data services," no longer was deemed by the FCC to necessitate "special consideration;" (2) the Commission's original concern about the potential for anticompetitive collusion by GTE and AT&T had decreased; and (3) GTE's recent conduct and Computer II considerations "indicate the likelihood that GTE will not subject Telenet's competitors to anticompetitive practices." Order at 18. Similarly, the accounting safeguards imposed as a condition of the merger were considered to be no longer warranted, largely because of Computer II implementation as well as GTE's creation of a new accounting system which were intended to, inter alia, develop separate accounts for unregulated operations. Order at 20.

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(8) Comsat/INTELSAT/INMARSAT

The next major Commission application of its separate subsidiary policy was proposed in its report to Congress concerning the Communications Satellite Corporation (Comsat). The Communications Satellite Act of 1962, as amended, 47 U.S.C. 751 (1962) directs the Commission to study the corporate structure and operating activities of Comsat to determine if any changes are necessary to ensure that Comsat is fulfilling its statutory obligations. Comsat Study, 77 FCC 2d 564 (1980). The staff determined that Comsat has undergone definitive changes in its activities. Its role as the U.S. representative in INTELSAT and INMARSAT is decreasing while it is expanding its operations in unregulated lines of business. Therefore, Comsat's current statutory, structural and government oversight safeguards are inadequate to protect the public interest. To remedy this situation, the staff proposed that Comsat be separated into two distinct corporate elements. A parent entity should be established, called Comsat Global, to continue Comsat's INTELSAT/INMARSAT functions. A subsidiary, Comsat National, should be created to handle other lines of business. In keeping with past practices, the staff recommended that the two entities maintain separate officers, facilities, books of account, procurement and operating personnel, and advertising methods. They could, however, have interlocking directors.

The staff found two major problems with Comsat's present structure. First, Comsat had the ability to evade rate regulation

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through misallocation of costs. Second, Comsat had to be precluded from utilizing information obtained through its role in INTELSAT and INMARSAT to aid its activities in competitive markets. Comsat Labs, a highly sophisticated and successful operation, would become part of Comsat National. However, Comsat Global would be able to obtain research and development from the Lab on an arm's length basis.

The overall goal of the restructuring of Comsat is to balance the benefits of permitting Comsat to utilize its "high technology facilities and professional resources" against the detriment of providing Comsat with the opportunity to engage in anticompetitive behavior. This goal can be achieved by separating Comsat's monopoly services from its other lines of business. It will then be easier for the Commission to identify rate base elements and relevant costs. The staff contended, however, that in this instance structural separation should be coupled with increased government oversight to protect the public from Comsat's conflict of interest between its role in INTELSAT and INMARSAT and its nonregulated lines of business. This safeguard could be in the form of adding a U.S. Government representative, who is not affiliated with Comsat, to the U.S. Signatory's delegation to the INTELSAT and INMARSAT Board of Governors.

On August 5, 1982, the Commission followed the basic recommendations set forth in the staff Comsat Study, requiring the separation of Comsat's monopoly (INTELSAT/INMARSAT) services from its other activities. Memorandum Opinion and Order, CC

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Docket No. 80-634, 90 FCC 2d 1159 (1982) (Structure Order) Many of the study's proposals had been voluntarily implemented by Comsat in its reorganization subsequent to the study's release, but deficiencies were found in several areas. Conditions were then imposed concerning Comsat's accounting for research and development as well as shared administrative and support services, and its method of disseminating information relating to INTELSAT and INMARSAT. The appropriateness of these safeguards was affirmed on March 31, 1983. Memorandum Opinion and Order, FCC 83-121, released April 20, 1983.

(9) American Satellite Company

Fairchild industries, parent of The American Satellite Corporation, and Continental Telephone Corporation applied to the Commission for approval of a joint venture to establish a new entity, the American Satellite Company, to provide communications common carrier services. American Satellite Co., 80 F.C.C. 2d 254 (1980). The applicants were obviously aware of the Commission's policy regarding mergers and joint ventures by existing communications common carrier participants and included self-imposed conditions in the application. The new entity would be structurally separate from the two parent companies. To this end, the new company would maintain separate facilities and employees, deal at arm's length with Fairchild and Continental, keep separate books of account, secure basic transmission facilities by tariff or contract, maintain separate

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marketing personnel and maintain arm's length R&D license agreements among AmSat Co., Fairchild and Continental. The structure of the application facilitated its approval and eliminated the need for Commission-imposed conditions.

3. Second Computer Inquiry

The separate subsidiary concept was again utilized by the FCC as a regulatory tool in the Second Computer Inquiry. This and related proceedings represent a far reaching attempt by the Commission to re-draw traditional lines of regulation, given the emergence of competition and the existence of rapid technological change.

The predecessor to "Computer II," the First Computer Inquiry, Regulatory and Policy Problems Presented by the Interdependence of Computer and Communications Services and Facilities, 28 FCC 2d 291 (1970) (Tentative Decision); 28 FCC 2d 267 (1971) (Final Decision), aff'd in part sub. nom. GTE Service Corp. v. FCC, 474 F. 2d 724 (2d Cir. 1973), decision on remand, 40 FCC 2d 293 (1973), was initiated because of the ambiguities created by the convergence of computer technology and common carrier communications offerings. In that proceeding, the Commission developed four categories for determining its jurisdiction, including two "pure" categories, i.e., one regulated (communications) and one unregulated (data processing), as well as two hybrid regulatory classifications (hybrid DP and hybrid communications). This scheme was soon obsoleted by new

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technology, such as the advent of distributed processing and regulatory developments, e.g., AT&T's Dataspeed 40/4 offering that did not fit any of the Computer I categories.

The Second Computer Inquiry was inaugurated to correct these deficiencies. Notice of Inquiry and Proposed Rulemaking (Notice), 61 FCC 2d 103 (1976); Supplemental Notice of Inquiry and Enlargement of Proposed Rulemaking (Supplemental Notice), 64 FCC 2d 771 (1977); and Tentative Decision and Further Notice of Inquiry and Rulemaking (Tentative Decision), 72 FCC 2d 358 (1977). A new taxonomy was devised that would permit "voice" and "basic nonvoice" services to be directly provided by carriers, but "enhanced nonvoice" services could only be offered under a resale structure. The customer premises equipment (CPE) regulatory scheme centered on whether CPE performed more than a basic media conversion function. This definitional framework, too, was found wanting as technological change blurred the distinction between types of network services and CPE.

On April 7, 1980, the Commission adopted the Final Decision in the Second Computer Inquiry, thereby establishing the policies and procedures that have completely removed enhanced communications services from Title II regulation and will soon deregulate all customer premises equipment. As modified subsequently by a Reconsideration Order and a Further Reconsideration Order, Computer II states that only basic services must continue to be regulated by the Commission, while enhanced services have been detariffed and deregulated since January

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1, 1983. Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry) 77 FCC 2d 384 (1980) (Final Decision), reconsideration, 84 FCC 2d 50 (1980), further reconsideration, 88 FCC 2d 512 (1981), aff'd sub. nom. CCIA v. FCC, 693 F. 2d 198 (D.C. Cir. 1982) cert. denied, 103 S. Ct. 2109 (1983). A "basic service" is a transmission service limited to the common carrier offering of transmission capacity for the movement of information. An "enhanced service" is any service offered over common carrier transmission facilities which provides the customer additional, different or restructured information or permits customer interaction with stored information.

a. CPE Deregulation

The Final Decision as amended also provides for the phased, or "bifurcated," deregulation of most CPE, viz., equipment that

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is provided by common carriers and located on customer premises.[1] New CPE, i.e., that equipment which is acquired by a carrier or manufactured by an affiliated entity after January 1, 1983, must now be sold or leased only on an unregulated basis. New CPE may be provided to customers in any manner the company chooses, but is not subject to regulation. The local telephone companies are not responsible for the maintenance of new CPE purchased by the customer from a vendor; however, they may maintain new CPE on a detariffed basis. The companies also are not responsible for installation of new CPE unless they are required to provide jacks, plugs or additional wiring by state regulations; charges for such installation generally remain under tariff. The telephone companies must keep separate books of accounts for costs and revenues associated with new CPE, including maintenance.

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[1] Although certain equipment has not been deregulated pursuant to Computer II or other Commission decisions, the number of such categories is dwindling. Under the terms of the original Computer II order, the following types of equipment were not to be deregulated: equipment located on telephone company premises and used by the company in the normal course of business as well as over-voltage protection equipment, inside wiring, coin-operated public or pay phones, and multiplexing equipment to deliver multiple channels to the customer. CPE also has not included Centrex systems unless located on the customer's premises, and terminal equipment attached to residential party line service. 77 FCC 2d 384, n. 57. However, system wiring and all mobile radio equipment have since been detariffed, as has registered customer-implemented coin telephones. Transmit earth station equipment that requires licensing under Title III of the Communications Act of 1934, as amended, is not currently considered to be CPE. 84 FCC 2d 61. The Commission decided that party line equipment, in fact, is CPE and should essentially be unregulated and not subject to Part 68 registration rules. 84 FCC 2d 70 and Third Notice of Proposed Rulemaking, Docket 81-216, supra.

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The remaining category, embedded CPE, comprised of that equipment or inventory which is state or federally tariffed or otherwise subject to the jurisdictional separations process as of the bifurcation date, will also be deregulated. On April 13, 1982, the Commission issued a Notice of Inquiry, FCC 81-516, in CC Docket No. 81-893 requesting public comment on such issues as the manner and timing of removal of embedded CPE from carrier rate bases, valuation of this CPE to permit a determination of the rate base impact and transfer prices, and new accounting rules and procedures for transferring or selling embedded CPE. A Notice of Proposed Rulemaking was adopted the following year, FCC 83-131, released June 21, 1983, suggesting resolutions for these issues. Then, on November 25, 1983, the Commission ordered that AT&T's $10 billion embedded CPE base be transferred from the BOCs (Bell operating companies) to AT&T Information Systems (ATTIS) at net book value. Report and Order, 95 FCC 2d 1276 (1983), released December 15, 1983. Under the FCC plan, existing customers could purchase their in-place terminal equipment or continue to lease the CPE. Embedded CPE owned by AT&T was detariffed on January 1, 1984, coincident with divestiture of the Bell System; however, a two year transition period was established whereby the embedded stock would be fully deregulated by January 1, 1986. Intrasystem wiring associated with the embedded CPE remained the property of the BOCs because of Commission concern about possible anticompetitive effects if the facilities were assigned to ATTIS.

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In the Second Report and Order in Docket 81-893, FCC 84-269, released June, 29, 1984, the Commission detariffed embedded CPE used in mobile telephone service. Concerning the Bell System, such equipment was detariffed and transferred from the BOCs to ATTIS, with full deregulation occurring later. The FCC set January 1, 1985 as the effective date, for the detariffing of the Independent telephone companies embedded mobile CPE, with the states allowed to establish valuation standards consistent with the requirements of Democratic Central Committee.[2]

The Commission's Third Report and Order, FCC 84-483, prescribes criteria and procedures for the removal of embedded customer premises equipment owned by the Independents. State PSCs are required to detariff all such embedded equipment by no later than December 31, 1987, the date on which the interstate revenue requirement associated with that plant will be reduced to zero.[3] On a case by case basis, however, an Independent could be authorized to deregulate its embedded CPE by no later than December 31, 1990, in order to afford full capital recovery of the equipment.

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[2]This court decision articulates what has become the principal rules regarding the treatment of any gains or losses in connection with the removal of utility assets from regulatory service. Democratic Cent. Comm. v. Washington Metro. Area Transit Comm., 485 F. 2d 786 (D.C. Cir. 1973), cert. denied sub nom. D.C. Transit Sys. v. Democratic Cent. Committee, 415 U.S. 935 (1974).

[3]In CC Docket 80-286, the Commission adopted the "Popenoe Plan" in which CPE investment, maintenance, and depreciation amounts for telcos were frozen at 1982 levels and reduced to zero in 60 equal steps for jurisdictional separations purposes. See Amendment of Part 67 of the Commission's Rules and Establishment of a Joint Board, Decision and Order, 89 FCC 2d (1) 1982.

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b. Structural Separation

Another result of the Computer II decisions was the predivestiture imposition of structural separation requirements upon AT&T for its provision of enhanced services and CPE. The original separation conditions as set forth in the Final Decision were primarily established to mitigate the potential for cross subsidization or other anticompetitive conduct of AT&T and GTE. The Commission's action, succinctly embodied in Section 64.702 of the FCC's Rules, essentially required that for new CPE and enhanced services:

1) The separate subsidiary must possess its own switching equipment and computers on premises, and maintain separate books of accounts, officers, operation, installation, marketing and maintenance personnel, and product advertising.

2) The subsidiary may not own transmission facilities and may obtain them only under tariff. The entity may, however, build transmission facilities for a third party.

3) Dealings between the subsidiary and the affiliated manufacturing and research companies are allowed. However, transactions must be auditable and compensatory, and at "arm's length" between the subsidiary and the manufacturer. The associated

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manufacturer may install and maintain equipment that it sells to the subsidiary. The subsidiary itself may manufacture CPE but may not manufacture or market network (e.g., transmission) equipment.

4) The research affiliate may provide R&D not related to software. Software used by the subsidiary in the provision of enhanced services or equipment may be developed only by that subsidiary or nonaffiliated contractor, except for utility software (e.g., debugging aids) and "firmware" that is an integral part of the hardware design.

5) The affiliated carrier may share certain administrative services (e.g., legal) and institutional advertising on a cost reimbursement basis. It must also disclose changes in CPE interconnection standards to the public with reasonable notice, and make available customer proprietary information to others on the same basis as it does to the subsidiary, if at all. The carrier must also refrain from selling or promoting CPE or enhanced services on behalf of its separate subsidiary, nor may it avail to the subsidiary a nontariffed basis any computer capacity or systems used for the provision of its common carrier communications services. All transactions between the subsidiary and the carrier

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or its affiliates must be reduced to writing. Finally, Commission approval must be received regarding capitalization of the separate subsidiary.

Other carriers may directly provide enhanced services and CPE but must keep separate books of accounts for all unregulated activities. Those carriers that own common carrier transmission facilities and provide enhanced services, but are not subject to the separate subsidiary requirement, must acquire transmission capacity pursuant to the same prices, terms and conditions reflected in their tariffs and available to other providers of enhanced services.

A number of changes have subsequently been made, primarily in terms of interpreting and refining the original conditions, as well as re-evaluating their applicability. On reconsideration, the FCC established specific criteria for determining the need for structural safeguards in a given case. In assessing whether separation requirements should be maintained, consideration was to be given to the following factors: 1) a carrier's ability to engage in anticompetitive activity through control over "bottleneck" facilities, i.e., local exchange and toll transmission facilities, on a broad national geographic basis; 2) a carrier's ability to engage in cross-subsidization to the detriment of the communications ratepayer; 3) the integrated nature of the carrier and affiliated entities, with special emphasis upon research and development and manufacturing

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capabilities that are used in conjunction with, or are supported by, communications derived revenues; and 4) the carrier's possession of sufficient resources to enter the competitive market through a separate subsidiary. Moreover, the FCC decided to "wait to see if competitive abuses develop" before applying the separate subsidiary mechanism to additional carriers. 84 FCC 2d 72.

Using these guidelines, the Commission concluded that GTE did not possess market power on a national scope sufficient to warrant structural separation. Id. The Commission also affirmed that code and protocol conversion is an enhanced service, as are AT&T's "Custom Calling Services II" and "Dial-It" offerings, thereby requiring provision through a separate subsidiary. 84 FCC 2d 55,60. Voice and data storage and retrieval applications were not deemed to be "basic service" applications. 84 FCC 2d 61.

Concerning CPE, a "bifurcated" schedule for deregulation was established (and later revised) for new and embedded equipment (see above). 84 FCC 2d 66. The earlier prohibition regarding software was modified such that the separate subsidiary could secure generic software used for CPE from the affiliated manufacturers if the latter sells it to any interested purchaser. 84 FCC 2d 81.

The Commission retained the information flow restrictions, clarifying that disclosures of customer proprietary information may only take place with the approval of the affected customers.

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84 FCC 2d 83. In addition, the disclosure requirement concerning interconnection was broadened to apply to all carriers owning basic transmission facilities. 84 FCC 2d 82. Permissible shared functions were identified as accounting, auditing, legal services, personnel recruitment and management, finance, tax, insurance, and pension services, as well as the physical space used for such joint administrative services. 84 FCC 2d 85.

The proscription relating to network equipment was narrowed to restrict affiliated entities from acquiring such equipment from the separate subsidiary if the equipment is not manufactured by the subsidiary. 84 FCC 2d 84. Finally, the ban on ownership of transmission facilities by the subsidiary was clarified to permit such ownership or operation for a given customer whose communication needs are spread among multiple buildings at a common location such as an industrial park. 84 FCC 2d 76.

These changes essentially predated divestiture. Other revisions pertaining to structural separations were also incorporated during that period. A weighing of the four separation criteria led the Commission on October 7, 1981 to initially impose the "separate sub" structure on the two minority-owned Bell operating companies. Memorandum Opinion and Order, released October 20, 1981, 88 FCC 2d 33. On May 12, 1983, the FCC determined that AT&T may offer its basic packet switching service (BPSS) on a regulated, tariffed basis, i.e., as a "basic service" offering. Memorandum Opinion, Order and Authorization, File No. W-P-C 4841, 94 FCC 2d 48 (1983). The

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agency subsequently concluded that a basic switched service may properly include those forms of protocol processing which are necessary for a switched service to be offered and do not involve the creation, deletion, or modification of message information, nor subscriber interaction with stored information. Memorandum Opinion, Order, and Statement of Principles, General Docket No. 80-756, FCC 83-510, released November 21, 1983. Western Electric and Teletype Corp., the manufacturing arms of the Bell System, were allowed to market CPE directly to foreign buyers, nonBell equipment manufacturers and/or suppliers of CPE, and to the federal government. Further Reconsideration, 88 FCC 2d 544 (1981). AT&T's request for permission to offer receive-only earth stations through its interexchange carrier, AT&T Communications, Inc. (ATTCOM), on a tariffed basis was denied by the Commission, which determined such CPE should be considered deregulated and may only be offered through AT&T's separate subsidiary. Order, ENF 83-15, FCC 83-6303, adopted December 22, 1983.

Additional clarification regarding information disclosure obligations for all carriers owning basic transmission facilities, but especially those subject to structural separation were set forth by the Commission in its Report and Order, ENF-82-5, FCC 83-182, released May 9, 1983. In that order, the FCC directed AT&T to publicly disclose information provided to or otherwise benefiting its separate subsidiary (then American Bell Inc., now renamed AT&T Information Systems or ATTIS) concerning network

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design, technical standards, interfaces, or generally, the manner in which interconnected CPE or enhanced services will interoperate with AT&T's network. Id. at 36.[4] In addition, disclosure is required for information pertaining to carrier commitments with respect to the timing of introduction, pricing, and geographic availability of new network services or capabilities. Id. at 37. The requirement relates solely to network information possessed by the carrier, i.e., does not require either the carrier or its separate subsidiary to divulge information concerning their competitive market plans for CPE or enhanced services. Id. at 71.

The Modification of Final Judgment (MFJ) which led to the divestiture of AT&T has significantly impacted Computer II's separation requirements. The structural safeguards imposed on Cincinnati Bell Inc. and Southern New England Telephone Company in an earlier Commission decision were removed "as a result of the changed circumstances created by the MFJ," Memorandum Opinion and Order, FCC 83-74, released February 25, 1983. The consent decree also caused the Commission to terminate its investigation of AT&T's now defunct intrasystem agreements (e.g., the license contracts) and to consider the arrangements of GTE,

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[4]Examples of the particular types of information sought by the Commission are: (a) circuit quality (transmission speeds, error rates, bandwidths, equalization characteristics, attenuation, transmission delays, quantization effects, non-linearities etc.); (b) performance specifications for switched systems (connection times, queuing delays, blocking probabilities, etc.); and (c) network protocols (message formats, requirements for synchronizing bits, error detection and correction procedures, signalling procedures, etc.).

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United, and Continental Telecom (Contel) at some later date. Report and Order, CC Docket No. 80-742, FCC 83-601, released January 16, 1984. The Commission originally intended, inter alia, that the issue of whether Western Electric's manufacturing and R&D activities should be separated would be examined during the license contract review. Further Reconsideration Order, 88 FCC 2d 547 (1981).

Consummation of the MFJ has moved the FCC to re-evaluate the need for structural separation for the entities which comprised the Bell System prior to its dismantling.[5] On November 23, 1983, the Commission decided that a set of modified structural conditions be applied to the divested Bell operating companies (BOCs). Report and Order, CC Docket No. 83-115, 95 FCC 2d 1117 (1984) (BOC Separation Order). Basically, the BOCs will be permitted to: 1) engage in joint billing for CPE for four years following divestiture; 2) refer dial tone customers to the separate subsidiary, provided that the customer is informed of the availability of alternative CPE vendors; 3) perform joint installation and maintenance of residential CPE; 4) share in the same types of administrative services as AT&T is permitted; and 5) demonstrate that some other organizational structure, e.g., a separate unincorporated division, will meet the same goals as would a separate subsidiary. 95 FCC 2d 1120. The

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[5]States have been empowered by the Commission to determine the need for structural separation requirements for independent carriers consistent with the terms of the Computer II decisions. Memorandum Opinion and Order, FCC 84-190 released May 4, 1984.

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Commission believed that this relaxation of the separation requirements was warranted because of significantly changed circumstances brought about by the AT&T divestiture. 95 FCC 2d 1124. Thus, the BOCs would not be affiliated with Western Electric, would not participate in the interLATA market, and would reenter the CPE arena sans an established market share. 95 FCC 2d 1120. Continued use of the basic separate structure approach was affirmed, however, because it was deemed to be the

> most cost-effective regulatory tool to protect ratepayers from bearing the costs of providing competitive products and services and to promote competition. 95 FCC 2d 1139 (1984).

The BOC Separation Order also asserted that the Commission intended to "review the appropriateness of the separation conditions [as modified] within two years" after the BOCs had complied with the new set of conditions "in light of prevailing circumstances." 95 FCC 2d 1124. The agency reemphasized that accounting by itself would provide the public less protection against "improper cost shifting" than would structural separation. 95 FCC 2d 1131. Further, it was ascertained that accounting separation can be both more difficult to oversee and a much more intrusive method of agency monitoring. 95 FCC 2d 1136. Although Western Electric had been severed from the Bell companies, the "arm's length" manufacturing rule was not eliminated because of an insufficient record. 95 FCC 2d 1145. Separate subsidiaries would still be required for regional company provision of cellular mobile services in order to ensure equal

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interconnection for (i.e., avoid discrimination against) competing cellular service providers and to minimize unlawful cross subsidization. 95 FCC 2d 1136.[6]

On reconsideration, the revised structural conditions were affirmed. Memorandum Opinion and Order, (Reconsideration), FCC 84-252, released June 1, 1984. Several important policy clarifications were advanced by the Commission with respect to separation. First, the four separation criteria established in Computer II (see supra) are to be viewed not as "rigid requirements" but, rather, as "guidelines" which the Commission regarded as relevant in determining which carriers should be subject to structural safeguards. Reconsideration at 13. Moreover, ". . . not every one of these four factors need to be satisfied to impose structural separation." Id. In addition, the FCC posited that it ". . . never relied upon BOC integration with interLATA or manufacturing operations as a basis for structural separation." Id. at 38. As a threshold consideration, the Commission rejected the argument that regional holding companies and their noncommon carrier subsidiaries are not subject to FCC jurisdiction under the Communications Act because they do not directly provide common carrier facilities. Id. at 11. Other Computer II related changes have recently been approved

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[6]Unlike the Computer II rules for CPE and enhanced services, cellular rules (Section 22.901) permit the sharing of computer facilities used for tariffed service between landline carrier and its cellular subsidiary on a cost compensatory basis. Furthermore, joint advertising and promotional efforts are allowed for cellular services. 95 FCC 2d 1121.

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as a result of specific waiver requests. Southwestern Bell and BellSouth sought authorization to provide cellular, other mobile services (e.g., paging), and/or CPE jointly through their respective cellular subsidiaries. These motions were granted on January 31, 1985. Order, CC Docket No. 84-637, FCC 85-54, adopted January 31, 1985.

In addition, NYNEX Corporation has urged the Commission to approve formation of an integrated CPE sales force for three of its affiliates, NYNEX Business Information Systems, New York Telephone Company, and New England Telephone and Telegraph Company. Ameritech and BellSouth have requested that the FCC approve a plan where their separated CPE organizations act as sales agents solely for Centrex service. In its original ruling, the Commission required CPE and network services to be marketed separately. BOC Separation Order, at 52-54. In July 1984, however, it decided to allow the unregulated subsidiaries of the divested Bell operating companies as well as third parties to act as sales agents (compensated on a commission basis) for telephone company-provided basic services (e.g., Centrex). Certain safeguards were established, including the requirements that (1) operating companies retain a sales staff of sufficient size to enable customers to obtain needed support services; (2) the sales agency program be made available on an equal basis for affiliates and nonaffiliates; and (3) state commissions be authorized to disallow unreasonable telephone company marketing expenses. Order, FCC 84-290, released July 11, 1984.

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The Commission has also partially approved the requests of all seven regional companies or their operating companies to provide protocol conversion services in conjunction with their packet switched networks. Carrier provision of X.75 internetwork interface and the associated X.25-to-X.75 protocol conversion within their basic networks is now permissible. The Commission granted these waiver motions primarily because of network efficiency considerations. Pending requests concerning removal of structural requirements for other types of protocol conversion (i.e., asynchronous to X.25 or asynchronous to X.75), however, await further analysis by the Common Carrier Bureau. Memorandum Opinion and Order, FCC 84-561, released November 28, 1984. In a related matter, Applied Spectrum Technologies, Inc. has petitioned the Commission to allow spread spectrum functions for alarm services to be offered as a basic network service by BOCs on an unseparated basis.

Pacific Bell has submitted a waiver motion seeking a finding by the FCC that a baseband unit in digital termination systems is not network channel terminating equipment (NCTE) and, hence, may be provided without structural separation; this treatment would be similar to that accorded the other DTS facilities owned and operated by telephone companies. Southwestern Bell seeks a waiver of the structural separation requirements for the provision of digital NCTE itself.

A major Computer II activity undertaken by the FCC concurrent with its policy making in this area has been its monitoring

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and auditing functions. An important vehicle for achieving such surveillance has been the requirement that, first, AT&T and, later, the seven regional companies file with the FCC on a specific schedule any capitalization plans for funding separate subsidiaries. Thus, the Commission examined and approved AT&T's capitalization plans for provision of both enhanced services and CPE on an unregulated basis by its separate subsidiary, American Bell, Inc. (ABI). Orders, FCC 82-261 released June 16, 1982, and FCC 82-496 released November 10, 1982. In both cases, AT&T's plans for compliance with the Computer II separation conditions as stated in its capitalization proposals were found to be consistent with the intent of the Computer II decisions. The Commission's review of preoperational expenses for ABI generally determined that these expenses were properly allocated, although questions arose concerning the allocation of basic research costs to ABI and the failure of Western Electric to reimburse ratepayers for certain preoperational funds. Finally, it was found that the enhanced services funding of over $500 million through 1985 and the CPE funding of almost $5 billion during the same period would not impair basic service quality or adversely impact rates.

On March 21, 1983, the Commission adopted two Bureau monitoring reports, one on treatment of preoperational expenses and the other on compliance with structural separation requirements, which generally accept AT&T's modus operandi relative to the Computer II requirements. Concerning shared

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administrative services, the Commission found several of AT&T's proposals unsatisfactory, including AT&T's proposed accounting for costs of shared activities and the suggested scope of the sharing between ABI and other AT&T entities (e.g., the General Departments and Western Electric). FCC 82-262, released June 16, 1982; FCC 82-496 , released November 10, 1982. After AT&T submitted changes to its original plan for a shared installation and maintenance of business CPE, the Bureau conditionally approved the AT&T proposal. Letter dated August 30, 1982, from the Bureau Chief to AT&T.

Through these and subsequent orders, the Commission approved the capitalization of ATTIS, nee ABI, to provide both CPE and enhanced services nation wide. See American Telephone & Telegraph Co., 90 FCC 2d 404 (1982), reconsideration, 91 FCC 2d 578 (1982) (Enhanced Services Capitalization Order), further reconsideration denied, 95 FCC 2d 167 (1983); American Telephone & Telegraph Co., 91 FCC 2d 578 (1982) (New CPE Capitalization Order), reconsideration denied, 95 FCC 2d 167 (1983); American Telephone & Telegraph Co., Mimeo No. 1600 (released December 30, 1982) (Picture-phone Meeting Service Capitalization Plan); American Telephone & Telegraph Co., 93 FCC 2d 599 (1983) (Compliance Order); Procedures for Implementing the Detariffing of Embedded Customer Premises Equipment and Enhanced Services, 95 FCC 2d 1276 (1983), reconsideration, CC Docket 81-893, FCC 85-35 (released January 29, 1985) (Embedded CPE Detariffing Order).

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Some instances of noncompliance have occurred. These practices were either ended voluntarily (see supra) or through fines (e.g., those levied on AT&T and Northwestern Bell regarding the commingling of ownership, on the one hand, and maintenance, installation, billing, and marketing, on the other hand, with respect to leased CPE; see New York Times, November 9, 1983 p. D19).

On February 4, 1985, the Commission released its report on the capitalization plans and audit/monitoring findings with respect to the seven Bell regional companies. Memorandum Opinion and Order, FCC 85-28 released February 4, 1985. In essence, the subsidiary funding plans were approved for the regions, but several new compliance problems were identified. The companies apparently "presented [the FCC] with numerous subtle variations on the theme of structural separation." Id. at 11. For example, general confusion exists concerning what constitutes a "neutral" dial tone referral for CPE. PacTel has apparently violated the joint bidding (i.e., "sales agency") rule and has been directed to discontinue such activity. Concerning information flow requirements, U S WEST has unlawfully omitted training programs for its employees relating to compliance with Computer II conditions; Ameritech has improperly provided customer proprietary information to its subsidiaries; and BellSouth has failed to prevent its CPE subsidiaries' access to operating company data bases. A number of companies have currently ignored the prohibition of joint officers, and NYNEX for a time violated

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the joint physical space condition. Other deficiencies include inadequate Centralized Operations Groups (COGs) recordkeeping regarding CPE interconnection, and outdated shared administration plans. Future Common Carrier Bureau activities ordered by the Commission include resolution of existing compliance issues; audits of preoperational expenses, dial tone referral costing and accounting, and shared administrative services; and monitoring of the impact of FCC rules and policies on any line of business waivers granted pursuant to the MFJ. Id. at 4.

AT&T's structural conditions have apparently been substantially affected by implementation of the MFJ. On January 31, 1985, the Commission proposed that structural separation requirements for the provision of CPE be eliminated for AT&T. The latter's postdivestiture inability to control the local loop, coupled with its eroding CPE market share and the high cost of maintaining duplicate facilities, led the FCC to recommend amendment of current Computer II rules with respect to AT&T's offering of CPE. In addition, the Commission decided to grant AT&T a waiver of the software rule to permit ATTIS to obtain proprietary software from AT&T Technologies, subject to the agency's approval of an AT&T accounting system and submission of a plan describing the company's compliance with the network information disclosure requirements. Further, AT&T will be allowed to realign personnel services between ATTIS and AT&T Technologies. However, the Commission has denied a waiver to permit AT&T Technologies at this time to market CPE directly

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to the federal government on behalf of ATTIS. Notice of Proposed Rulemaking, CC Docket No. 85-26, FCC 85-56.

Other FCC proceedings are pending which pertain to the possible modification of separation or other conditions currently applicable to AT&T. For example, the agency deferred until a later date the issue of whether AT&T must provide enhanced services subject to a separate subsidiary requirement. See FCC News Report No. 18231, released February 1, 1985. AT&T's offering of basic services via resale by its separate subsidiary is currently being considered. Notice of Proposed Rulemaking, CC Docket No. 83-1375, FCC 83-604, released January 5, 1984. The Commission has also been examining the question of whether AT&T should be permitted to undertake special construction of lines and special service arrangements. Notice of Proposed Rulemaking, CC Docket No. 84-369, FCC 84-146, released April 30, 1984. Finally, the basic issue of the need for long run regulation of AT&T has been set forth for public comment. Notice of Inquiry, CC Docket No. 83-1147, 48 Fed. Reg. 51340, November 8, 1984.

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In the next part, some of the more significant actions of the U.S. Congress, and the Courts are examined.[7]

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[7]The policies and programs of the individual states will not be reviewed here. Their jurisdiction has been preempted by the FCC with respect to regulation of enhanced services and CPE. 77 FCC 2d at 428-29; 84 FCC 2d at 99. The states are expressly forbidden to exempt the Bell companies from the separation requirement for intrastate regulatory purposes. 88 FCC 2d at n. 34. They may, in fact, impose separation conditions on those companies not required by the FCC to be so separated; however, any such protections must be consistent with the FCC's policies. 88 FCC 2d at para. 86. Thus, the latitude available to states to deviate from the framework established in Computer II is apparently quite narrow. One notable action taken by a state is the recent proceeding before the Alaska Public Utilities Commission whereby a stipulation was reached concerning, inter alia, the need for separation requirements for Pacific Telecom, Inc. Stipulation, Dockets U-83-55 and U-83-76, released October 12, 1984.

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B. Other Proceedings Relating to Structural Separation of Dominant Carrier Competitive Operations

1. U.S. Congress

In H.R. 5158, a bill to amend the Communications Act of 1934 to revise provisions of the Act relating to telecommunications, a number of separations requirements were proposed as a means to assure fair competition and preventing cross subsidies in the long distance telecommunications market. These requirements, as reported to the House Energy and Commerce Committee by the Subcommittee on Telecommunications, Consumer Protection, and Finance on March 25, 1982, included the following:

1) Not more than 50% of the subsidiary's board of directors may be employees, officers, or directors of AT&T.

2) Transactions between the parent and the subsidiary must be on an arm's length basis.

3) Joint ventures between AT&T and the subsidiary are prohibited, except for those limited to foreign export business.

4) Shared employees or financial structure, or common ownership of property by AT&T and the subsidiary are prohibited.

5) The subsidiary must conduct its own marketing, sales, advertising, accounting, hiring and training of personnel, purchasing, maintenance, preparation of tariffs, and operations relating to transmission services.

6) The subsidiary must maintain its own books, records, and accounts, which shall be audited annually by an independent certified public accountant.

7) The FCC has authority to prevent cross-subsidies and other anti-competitive practices between the subsidiary and its parent.

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8) All of AT&T's transmission facilities and services must be offered through the carrier subsidiary, on a regulated basis.

9) AT&T is required to file with the FCC a description of the protocols and technical requirements for connection with or use of the interexchange network. Additionally, AT&T must report to the Commission material changes in these protocols and technical requirements, and summaries of construction programs to maintain, extend, or expand its common carrier services or facilities. Long Lines cannot provide customer information to AT&T which is not provided to others.

10) Any common carrier with an affiliated manufacturer (primarily AT&T and GTE) must procure network equipment on a nondiscriminatory basis. Dealings between the carrier and its manufacturer must be on an arm's length basis. Sales and purchases of network equipment must be reported by product category to the FCC on a regular basis. The divested companies are barred from establishing a central procurement authority for ten years.

The bill passed the House Subcommittee on Telecommunications and was favored by a majority of House members but failed to pass at that level because of industry delaying tactics.

2. The Courts

The Modification of Final Judgment (MFJ) agreed to by AT&T and the Department of Justice specifically circumscribes the activities in which the postdivestiture regional companies and their affiliates may participate. More particularly, the original January 8, 1982 consent decree limited the BOCs to the provision

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of exchange, exchange (and information)[8] access services, and the provision of natural monopoly services ". . . actually regulated by tariff" (Section II (D)). Subsequently, the U.S. Court for the District of Columbia modified the agreement to permit the BOCs to provide, but not manufacture, CPE and to continue to publish the Yellow Pages. Court approval must be obtained before the Bell regions may engage in any other line of business. See United States v. AT&T, 552 F Supp. 131, 187 (D.D.C. 1982), affd. sub nom. Maryland v. U.S., 103 S. Ct. 1240 (1983).

In an Opinion issued July 26, 1984, United States v. Western Electric and AT&T, Civil Action No. 82-0192, the Court set forth the standards and procedures that it would use in ruling upon any motion for waiver of existing MFJ constraints. The Court asserted, inter alia, that it would not consider granting any regional company permission to enter the equipment manufacturing, interexchange service, or information service markets at this time. Slip Opinion at 46. Four conditions were established

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[8] "Information services" are the offering of a capability for the generation, acquisition, storage, transformation, processing, retrieval, utilization, or making available information which may be conveyed by telecommunications, e.g., videotext, some forms of electronic mail, electronic publishing services, data processing services, telephone-operated burglar alarm systems, and some office management systems. Such services do not include any use of any such capability for the management, control or operation of a telecommunications system or management of a telecommunications service. Decree, Section IV (J). See also Opinion, filed December 13, 1984, U.S. v. GTE (D.D.C.), n. 46.

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by the Court which must be met by the petitioner before its waiver could be authorized:[9]

1) The regional holding companies must conduct competitive activities through separate subsidiaries. The Court opined that such structural safeguards are appropriate where there is a "substantial possibility that the Operating Companies 'could impede competition.'" It also stated that conducting activities through such subsidiaries would make intracompany transactions more apparent and that cross-subsidization or other anticompetitive conduct therefore could be more easily prevented or rectified. The Court refused to define specifically the form that the subsidiaries should take, apparently leaving at least the initial stage of that task to the Department of Justice.

2) Subsidiaries engaged in competitive enterprises must obtain their own debt financing on their own credit, and no entity affiliated with the regional holding company may guarantee the debt in any manner that would permit a creditor, on default, to have recourse to the assets of an operating company. The Court asserted that use of operating companies' financial resources or credit for new ventures created a potential

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[9]U S WEST is currently appealing the use of these guidelines.

for cross subsidization and tended to jeopardize the financial soundness of the operating companies.

3) The total estimated net revenues from activities for which waivers are granted must not exceed ten percent of a regional holding company's total estimated net revenues. The Court reasoned that such a limitation serves to protect the nation's telecommunications service from injury due to failure of management to devote sufficient attention to regulated activities and ensures that the bulk of the investment of the RBOCs remain in exchange telecommunications-related activities.

4) Each regional holding company seeking a waiver must agree in its application that the monitoring and visitorial provisions of Section VI of the Decree apply to its proposed competitive activities. Id. at 53-57.

The Court directed the regional companies to submit any line of business waiver request to the Department of Justice. Each such motion would necessarily be accompanied by a detailed proposal describing the products or services to be offered, the specific means of provision, and the conditions proposed for avoiding the various problems identified in the Opinion.

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The Court ordered the Department of Justice to examine the requests, in conjunction with the petitioning regional company and "all other interested parties." Id. at 59-61.

On December 14, 1984, the Court issued a Memorandum and Order, United States v. Western Electric and AT&T, Civil Action No. 82-0192, approving thirteen pending petitions for waivers of the line of business restrictions of the decree. More specifically:

* BellSouth is permitted to provide office equipment. Pacific Telesis may offer such equipment through retail stores. NYNEX is given permission to market this equipment and related services through retail stores.[10]

* Bell Atlantic may enter the computer sales and services business (through acquisition of an existing company).

* Bell Atlantic is also allowed to enter the equipment leasing business (via acquisition).

* Pacific Bell/Nevada Bell, U S WEST, and NYNEX are

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[10]According to the Court, such activity would entail the sale, lease, installation, maintenance, repair, and training for the use of such equipment as computers, peripherals, electronic typewriters, answer and recording devices, office security systems, desk-top copiers, inside wiring, and various incidental products and devices. Slip Opinion at n. 39.

allowed to enter into foreign business ventures. Ameritech may offer foreign consulting services.

* Ameritech is permitted to provide cellular services and invest in such systems outside the United States. U S WEST/New Vector may construct and operate a cellular radio system in the Gulf of Mexico.

* U S WEST may provide real estate services and engage in real estate transactions and investments. Pacific Telesis is allowed to establish a real estate subsidiary.

Two additional requests (viz., by NYNEX to jointly provide office products through its BOCs and separate subsidiaries, and Ameritech for provision of shared tenant services) were not approved by the Department of Justice and were subsequently withdrawn. A number of other lines of business waivers petitions are currently pending, including Ameritech's proposal to provide nontariffed billing services to any U.S. communications service providers, the request by Ameritech and Bell Atlantic to sell switching equipment to any interested purchaser, including resellers, BellSouth's desire to provide software and related services, NYNEX's intent to enter the real estate market, Pacific Telesis' proposal to enter the print media field except for

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newspapers, and Southwestern Bell's interest in lease financing and office equipment business waivers.

The same Court presided over the entry of another consent decree terminating an antitrust complaint brought by the Department of Justice regarding the proposed acquisition of Southern Pacific Communications Company (SPCC) by GTE corporation. The complaint alleged that the acquisition could (1) serve to substantially lessen competition in the provision of interexchange telecommunications services (particularly where GTE operates local exchanges) and (2) create a substantial probability that GTE will monopolize information services in markets which it serves. Complaint, filed May 4, 1983, U.S. v. GTE.

Essentially, the Court approved the proposed merger ". . . only because of the strictness and firmness of the decree's injunctive and separate subsidiary provisions." Slip Opinion, U.S. v. GTE Corporation, Civil Action No. 83-1298, filed December 13, 1984, p. 16. Cross subsidization concerns have been dealt with primarily by requiring GTE to maintain total separation between the local telephone companies and the newly acquired companies. More specifically, the Operating companies are enjoined under Section IV of the decree from

1) transferring to or obtaining from the acquired entities any assets, operations, or lines of business, subject to certain exceptions. Thus, subsection IV(D) permits GTE to reorganize its corporate structure by

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transferring to or consolidating with the acquired entities all of its unregulated operations currently provided by GTE affiliates operating in unregulated markets. Subsection IV (E) authorizes GTE to transfer from its Operating Companies any customer premises equipment and any unregulated exchange telecommunications service.

2) maintaining with the acquired entities common directors, officers, or employees (other than the chief executive officer and the president of GTE), common facilities or assets, or common books of accounts, costs, or expenditures;

3) providing to or using for the benefit of the acquired entities any proprietary Operating Company telecommunications information;

4) furnishing to or receiving from the acquired entities any administrative (e.g., common buildings, trucks, garages, warehousing), engineering, research and development, or similar services;

5) providing jointly with the acquired entities telecommunications or information services, or jointly

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owning with them the assets used to provide such services; and

6) marketing or identifying their services with those of the acquired entities (except that the Operating Companies may inform their subscribers in a nondiscriminatory manner of the services offered by the interexchange carriers). However, the operating companies or newly acquired entities may be separately identified with GTE. Id. at 17-18, n. 33, 34, 36.

Certain transactions between GTE and the acquired operations are also limited by the Court under the modified decree. First, all financing of these entities must be furnished directly by GTE, its wholly-owned financing affiliates, or unaffiliated sources (Section IV (A)(5)). Moreover, the acquired entities may obtain services, information, and products from other GTE affiliates (other than the Operating Companies) only pursuant to contracts, and "on terms and conditions no more favorable than such services, information, and products are offered to the [Operating Companies]" (Section IV (A)(7)). The acquired entities must also pay the fully allocated cost of any services, information or products obtained from a GTE affiliate that are not also offered by the affiliate to the Operating Companies (Section IV (A)(7)(b)). Finally, the separate entity may not, directly or indirectly, obtain proprietary Operating Company

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marketing, customer, or network engineering information. Id. at 18, 27.

In addition, the Court embraces the decree's provision (Section V (B)) that bars the GTE Operating Companies from discriminating against interexchange carriers in the (1) establishment and dissemination of technical information and interconnection standards; (2) interconnection and use of exchange services and facilities, or the charges for each element of service; and (3) provision of new exchange access and the planning for and implementation of the construction or modification of facilities used to provide such access. Id. at 19-20. Furthermore, each Operating Company must furnish "equal access" to all interexchange carriers, i.e., exchange access and services for such access on an "unbundled, tariffed basis that is equal in type, quality, and price" (Section V (A)). Id. at n. 38. The traditional toll settlement procedures for apportioning such intercity revenues between AT&T and GTE ("the partnership") must be terminated by the end of a transition period (Section V (C)). Id. at 20-21, n. 39.

The Court modified the decree originally proposed by the Justice Department and GTE in three basic ways. First, procedural and substantive guidelines were established which would be followed if GTE or its Operating Companies violate the decree and divestiture is sought by the government. Second, the original provision that the GTE Operating Companies may provide information services directly within five years was eliminated, requiring

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structural separation until the defendants can demonstrate there is no longer a public interest need for it. Third, GTE cannot transfer to the acquired entities the domestic interexchange operations or facilities of Hawaiian Telephone Company because of the perceived anticompetitive impact of such a consolidation. Id. at 28-30, 55-56.

Most fundamentally, the GTE Operating Companies may not provide interexchange services but may offer information services albeit only through separate subsidiaries or divisions and on an equal and nondiscriminatory basis. Id. at 27. In fact, the Companies may engage in virtually any line of business, related or unrelated to telecommunications, subject to the decree's separation requirements. Id. at n. 48.

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C. Summary Assessment

In the history of separate subsidiaries used as a public policy tool in the U.S. telecommunications industry, the focus has been on structural separation between a regulated carrier and its competitive affiliates. This separation has been implemented by the establishment of various conditions, e.g., separate officers, books of account, and departments, in an attempt to insure that the potential for cross subsidization and other anticompetitive practices is minimized. Immediately following the First Computer Inquiry, most of the Commission's orders involving the establishment of separate subsidiaries dealt with actions by international carriers to offer domestic services, and the requirement that a separate subsidiary be created to provide those services. With the GTE-Telenet decision in 1978, however, and most of the succeeding orders, the Commission's concern largely centered on fashioning appropriate regulatory solutions for established domestic telecommunications carriers entering new domestic markets. In all of these instances, the Commission elected to use structural separation as the most appropriate vehicle to accomplish its objectives with respect to dominant carriers.

Structural separation, as noted above, encompassed several conditions. One of the basic conditions set forth in virtually all of the decisions ordering the establishment of separate subsidiaries was the creation of separate books of account for

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each entity. The agency has emphasized, however, that accounting by itself affords ratepayers less protection against anticompetitive cross subsidization than would structural separation. 95FCC 2d 1131. Accounting separation was also deemed to be more difficult to oversee and a decidedly more intrusive vehicle for surveillance. 95FCC 2d 1136.

During the last few years the trend has been for the FCC to relax or eliminate separation requirements for carriers heretofore viewed as dominant. Thus, the conditions applicable to the Bell Regional Companies have been softened in some areas (e.g., joint billing), while the Commission has proposed that AT&T be released from all structural safeguards for at least customer premises equipment.

In contrast, antitrust courts have shown a preference in recent years for imposing new structural safeguards for certain situations involving dominant carriers. Thus, the Bell Operating Companies have been permitted to enter certain competitive markets only with structurally separate operations. The GTE Operating Companies may engage in virtually any line of business, related or unrelated to telecommunications, subject to an enabling consent decree's requirement that the Companies' exchange operations be structurally distinct from their intercity and information services businesses.

In turn, many in the U.S. Congress have seemed to favor the separate subsidiary concept as a viable regulatory tool. Although no bill containing such provisions has become law,

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a number of bills have been passed at various levels of Congress. Some (e.g., S.898) have been approved by a majority in one of the houses.

At the state level, where the FCC has established certain constraints on structural remedies inconsistent with its Computer II policies, some initiatives have apparently been taken with respect to separation of exchange carrier and other operations. For example, Pacific Telecom's proposed acquisition of two telephone companies and a cable television firm in Alaska has been modified by a stipulation requiring, inter alia, structural separation between its exchange and interexchange businesses.

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SEPARATE SUBSIDIARIES AND STRUCTURAL SEPARATION IN UNITED STATES TELECOMMUNICATIONS: CONCEPTUAL ANALYSIS, APPLICATIONS, AND PROGNOSIS

SECTION III

FORCES DRIVING TELECOMMUNICATIONS' MARKET EVOLUTION IN THE UNITED STATES AND LONG TERM PROSPECTS

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SECTION III. FORCES DRIVING TELECOMMUNICATIONS' MARKET EVOLUTION IN THE UNITED STATES AND LONG TERM PROSPECTS

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SECTION III. FORCES DRIVING TELECOMMUNICATIONS' MARKET EVOLUTION IN THE UNITED STATES AND LONG TERM PROSPECTS

For many years telecommunications in the United States grew at a steady level, subject primarily to growth of the overall economy and related industries. Local exchange service expanded at about one-third of the level of long distance communications, with the growth in both areas for businesses exceeding that of residential offerings. In the early 1960s, demand for communications expanded in line with the proliferation of data processing and computer applications and the more pronounced shift of the overall economy toward information services. Concurrently, technological innovation, primarily benefitting long distance services, permitted lower costs of transmission, which, in turn, further stimulated industry demand.

Policy changes during the late 1960s and 1970s also had a substantial impact on telecommunications expansion, particularly affecting the number of available suppliers and the structure of supply. For instance, there was a fundamental shift by the Federal Communications Commission (FCC) from its traditional monopoly orientation to the FCC's more recent posture favoring competition and new entry. As a result, many new firms were encouraged to enter the long distance and equipment markets. By the end of the 1970s, the Commission favored not only open entry but also deregulatory policies, and began the process

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of shifting from a regime emphasizing regulatory oversight to a paradigm favoring market based control mechanisms.

Of course, divestiture of the Bell Operating Companies (BOCs) and the FCC's Computer II decision in the early 1980s were crucial events in an array of ongoing policy determinations that may eventually result in full changeover of the telecommunications' landscape to a market oriented sector. As discussed earlier, both divestiture and Computer II contained safeguards to ensure that the desired competitive result intended for the industry was not "derailed" by re-emergence of market power and monopolistic supply conditions. These and other policy decisions contained structural or accounting requirements and monitoring schemes that were designed to prevent such an outcome and therefore avoid the need for continued behavioral regulation during the changeover process.

However, the safeguards of the court and FCC were not "fixed in concrete" in any sense, but have continued to be modified to suit the changing industry environment. For instance, application of Computer II's structural separation requirements to the divested Bell Operating Companies (BOCs) has been lessened in several respects. GTE, which originally was required to set up separate subsidiaries for its deregulated activities, now is only subject to accounting separation conditions.

In short, it appears that evaluation of the long term efficacy of structural or accounting safeguards cannot be conducted "in a vacuum," but, instead, must reflect a prognosis of the

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outcome of unfolding events. Thus, evaluation should take into account expected changes in market structure, as well as company diversification and acquisition activities.

In addition, strategies of the various entities for improving market position and supply capabilities and share will impact the degree to which safeguards can prevent cross subsidy and provide for free entry and application of the full forces of competition. Finally, it is necessary to consider to what degree the current policy regime will be altered by various governmental entities themselves, or at least those which have a significant role in the overall policy making process.

This section examines the evolution of telecommunications' markets from the standpoint of the forces that have driven industry development in the past, namely, alterations in market structure and changes in governmental policy. In the discussion below, these areas are analyzed from the standpoint of the major entities operating within each, as well as the likely course that each will be following in the coming years. For instance, the supply sector is viewed through the eyes of such major "players" as the divested Bell companies, other telephone companies and new entrants, and firms providing for their needs through internal supply. Subsequently, the policy area is examined from the standpoint of positions likely to be taken by the FCC, Congress, and the courts.

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A. Structural, Technological, and Cost Factors

1. The Bell Operating Companies' New Outlook

Under the Department of Justice/AT&T consent decree or Modified Final Judgment (MFJ), the Bell Operating Companies were "set free" from AT&T in January 1984. Of course, since that time, the BOCs have been rapidly diversifying. All are participating in new ventures, as directed by the seven regional holding companies (RHCs) or parents of the BOCs.

These new ventures include incipient activities involving new communications terminal and office equipment (NYNEX), cable television transmission and DTS Systems (Bell Atlantic), overseas ventures (Pacific Telesis), real estate and consulting services (US WEST), cellular radio and paging offerings (Ameritech), and local packet switching systems (Southwestern Bell). Many of these activities have already received both court and FCC approval.

For example, in December 1984 Judge Greene ruled favorably on 13 waiver requests then before the court, including two by Bell Atlantic (equipment leasing and computer sales and service). Subsequently, in January 1985 the FCC, in a separate matter, found that Bell Atlantic's C&P Telephone Company subsidiary could build the new cable television system for the cable franchise winner in the District of Columbia. This approval required a waiver of the FCC's prohibitions against cross ownership of telephone and cable television systems.

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The diversification ventures of the RHCs are clearly ambitious. However, in order to assess these firms' ability to follow through on their plans, it is necessary first to consider their current financial and technological positions. As indicated by Chart III-1, the new Bell Regional Companies possess huge aggregations of resources. Indeed, in terms of (1982) assets, each would rank on a level equal to or above that of the "top 18" largest U.S. industrial corporations, while their profits would fall among those of the top 13 industrials. RHCs' sales figures are generally lower in comparison to those of other firms having similar asset levels, because of telecommunications' capital intensive nature. Nevertheless, all of the RHCs have revenues that would rank among the top 40 industrials.

The actual performance of the RHCs in 1984 bears witness to their underlying strengths. For example, all of these companies' earnings exceeded expectations, ranging from $1,257 million for BellSouth to $829 million for Pacific Telesis. Return on equity exceeded 13.00 percent for all the regional companies, and reached a high of 14.03 percent for Ameritech. Finally, the individual operating companies of the RHCs in most regions exhibited the ability to finance their construction programs and new ventures primarily from internally generated funds. Indeed, in many cases, owing to faster depreciation, these companies generated surplus funds.

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The degree to which new technology has been introduced by the RHCs will also bear on their future strength. As shown by Chart III-2, application of electronic switching and digital or fiber optic transmission systems has varied considerably between regions. For example, electronic switching has been most extensively introduced in Southwestern Bell's "Sun Belt" territory. NYNEX, which serves the older industrialized northeastern region, trails all other RHCs in this category. On the other hand, the Boston to New York corridor has seen the greatest development of fiber optics technology, and NYNEX is the fiber optics leader among the RHCs. U S WEST, which has the most extensive RHC geographical service area, has had few fiber optics transmission applications to date. But, excess satellite (distance insensitive) capacity coming into operation in the next few years may offer economies for transmission of U S WEST traffic over its extensive intraLATA territories.

A special feature of the initial diversification movement was the proposed mixing of regulated and unregulated activities under the same (RHC) "corporate roof." Several of these applications have been withdrawn, but the area is one of continuing public policy importance and recent experience is instructive. For instance, NYNEX proposed to market both regulated CENTREX service and unregulated terminal and office equipment products using a common sales force. Joint RHC arrangements with new market entrants also provided novel competitive implications. For example, the proposed Ameritech/Satellite Business Systems

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(SBS) tenant services venture would have intermingled resources of a traditional telephone industry supplier with those of a competitive satellite long distance concern.

Of course, there is potential for even greater long term cooperation between such firms. For instance, since SBS has considerable excess existing or planned capacity, it might welcome a "baseload" of new demand or traffic from a BOC or other exchange carrier. In addition, there are intriguing possibilities for joint marketing (e.g., of combination of communications and business office services and products). Notably, SBS has a parent (IBM) with an imposing presence in the important computer products industry.

Diversification has also lead to new BOCs' service offerings. For instance, Cincinnati Bell, Inc. (CBI), which is one of two Bell Operating Companies that is not subject to the restrictions of the Modified Final Judgment, will be offering discounted long distance services on a resale basis using leased facilities. Thus, CBI could employ its telephone resources to compete with "pure" resellers such as U.S. Telephone and Allnet.

Ameritech's early 1984 request for a MFJ waiver to provide least cost routing (LCR) to tenants and developers of its multitenant real estate projects illustrates other intriguing possibilities offered by the new post divestiture market structure. Recently, LCR has been proffered as simply a refined form of carrier presubscription, or an exchange access service for the origination of interexchange calls. But this service

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also holds the potential for any large exchange carrier to assume the role of "broker" in long distance markets.

Because of the exchange carriers' massive customer base, no long distance supplier could afford to withhold its services from the menu of those offered under a least cost routing plan. On the other hand, few major users of long distance services would be likely to find it economical to subscribe to only one long distance service, in a volatile world of changing structures and rates, or to invest in least cost routing equipment individually.

As a result, the LCR area could become the scene of a truly competitive battle among new and existing suppliers. On this battlefield, the determinants of success would be price and quality of service rather than access to a built-up (AT&T) historical base of customers or maintenance of traditional carrier/user relationships. Besides the Bell companies, Independent telephone companies have access to large concentrations of customer demand that would be ideal for a LCR scheme. Of course, the Independents are not directly subject to the provisions of the MFJ.

The new ventures of the RHCs provide special opportunities for cost sharing and deriving economies of operation. For instance, the cable television project of C&P offers nearly 80 institutional channels for data and other communications, as well as an equivalent number for "future expansion." This level of excess capacity may discourage bypass possibilities in the

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District of Columbia. Excess switching capacity on programmable exchange and equal access facilities offers the option of introducing new custom calling services not possible with older technologies. Thus, Southwestern Bell will be offering selective call forwarding and call rejection services in Texas from its new ESS switching facilities at low incremental costs. These machines can provide services that compete more effectively with PBXs and also with answer, alarm, and electronic mail offerings of terminal equipment based suppliers.

2. AT&T's Regulatory and Market Initiatives

AT&T has been engaged in an extensive process of restructuring its tariffed services and revamping its facilities since the late 1970s. These actions have been partly responsive to the FCC's attempts to introduce competition into the industry and partly the result of the company's new outlook on nonregulated activities. Well before divestiture, AT&T's strategy clearly embraced the notion that its long term financial position would be more and more dependent on markets not falling within its traditional telephone services' mission. These markets would be highly competitive and would require the ability to react quickly. Divestiture simply accelerated the process of change over to the new company outlook (and away from the former monopoly, assured level of earnings mentality).

AT&T found considerable sympathy for its new position at the FCC. Clearly, the Commission's Computer Inquiry II decision

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provided a means for the company to enter equipment and enhanced services markets on an equal footing with its competitors. The FCC's access charge decisions should also enhance AT&T's competitive position relative to that of other common carriers (OCCs) and resellers. The Commission is also speedily considering AT&T's restructuring of its private line offerings. The new restructure will permit AT&T to divorce its services from the BOCs' access offerings. Moreover, it will even permit customer provided (or bypass) local connections direct to the premises of end users.

Of course, a premium access surcharge on AT&T's rates will remain until 1986 and furnish competitors with short term price advantages. However, the realities of AT&T's new tariff structures appears to be spurring larger resellers and OCCs to find partners among traditional exchange carriers, or to invest in facilities and acquire strategic service locations. The possibility of AT&T's own bypass of the local exchange also seems to be motivating exchange carriers to expand into long distance and other markets.

AT&T has yet to publicize its plans for re-entry into the local exchange marketplace. The company is presently attempting to solidify a position in data processing, computer, and foreign markets through investments, acquisitions, and joint ventures (e.g., such as its $260 million investment in Italy's Ing. C. Olivetti & Co., a major European manufacturer of office and data processing equipment.) Amidst these attempts to move into

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new markets, AT&T must protect its rapidly eroding share of BOCs' equipment purchases. Given these activities and long distance concerns, the company momentarily has its "hands full."z

However, by the end of next year, further implementation of the FCC's access charge decision will remove even more of AT&T's financial burdens, equal access will have progressed, and much of the company's current private line and WATS service troubles will have become history. The FCC is also likely to have granted AT&T's requests for greater pricing flexibility and still faster depreciation. Thus, funds will become available for venture and expansion capital. At that time, the BOCs and other local exchange carriers are likely to be facing a much greater potential for AT&T's re-entry into the local exchange area.

AT&T facilities expansion will accelerate rapidly over the balance of this decade and provide the company with considerable services and network flexibility. The company plans to invest over $2 billion in digital microwave and coaxial cable, fiber optic routes, satellite and switching systems over the balance of the decade. By 1990, AT&T's movement toward an Integrated Services Digital Network (ISDN), using its own standards, and installation of high capacity transmission systems will be largely complete. While some facilities in outlying areas will remain antiquated, the company projects that all of its major routes will have digital capabilities using both satellite and terrestrial fiber optics based facilities. Transmission

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speeds of 1.7 gigabits per second will be achieved by as early as 1988. And, costs per circuit mile, currently about $8, will fall to less than $1 by 1989.

3. Prospects for Other Carriers

GTE, Continental Telecom, United Telecommunications, and MCI appear to be some of the more likely current aspirants to survive the market pressures that will be exerted by AT&T and the BOCs. These facilities based carriers, rather than resellers and enhanced service suppliers, will form the nucleus of the industry in the 1990s along with the former Bell System firms. All of these companies are investing heavily in plant and expanding into new market areas in anticipation of having to face across-the-board competition from less regulated Bell entities.

For instance, GTE, the largest independent telephone company, is complementing the firm's local exchange presence with acquisitions of Sprint long distance service and Telenet's packet switching capabilities, and its emerging presence in satellite transmission. By encouraging faster depreciation of its plant and recovery of this investment through higher local rates, GTE has also stimulated its flow of internal financing and is rapidly turning over aging facilities.

United Telecommunications, another major independent telephone company, is following a similar course. United's UNINET operations provide it with a presence among packet switched services providers, while the company's acquisitions of ISACOMM

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and U.S. Telephone Communications give the firm long distance capabilities. In addition, United is currently embarking on an ambitious $2 billion construction program to give the company wideband fiber optics transmission capabilities.

Continental Telecom similarly has acquired long distance capabilities through its American Satellite venture with Fairchild and Western Union. The company also has equipment manufacturing operations and capabilities in the related computer software area. In preparation for the emerging structure of the industry, Continental has recently reorganized its organizational structure to separate its Executone key system and PBX divisions from its telephone, diversified ventures, and networks groups.

While these companies are "integrating forward," MCI is rapidly integrating backward into local exchange distribution. For example, MCI is securing a presence in cellular radio, digital termination, and cable television facilities. Moreover, MCI is plowing back much of its tremendous growth in revenues into plant and facilities. The company's construction program is already well in excess of $1 billion.

In addition to MCI, Satellite Business Systems represents another facilities based carrier that is likely to remain a viable entity through the end of this decade. While still unprofitable, SBS now has the full support of IBM, as well as its parent's considerable internal long distance demand as a captive revenue source. SBS has broadened its product base by moving into public switched digital services, unbundled so

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that users no longer need to "buy a whole network." Of course, the company also offers a consumer telecommunications service in competition with MCI, AT&T, GTE and others. This offering alone should improve SBS' financial picture, at least as long as it enjoys a discount from AT&T's access rates.

4. Users, Carriers' Carriers, and Others

Since the advent of the FCC's Above 890 decision in 1959, major telecommunications users including the airlines, railroads, banks, and pipelines have constructed their own microwave facilities to carry internal traffic. Many of these firms made extensive investments, with some companies, such as Southern Pacific, even entering the long distance market as direct competitors to the telephone carriers. However, by 1982, the total capacity of private networks still only compared to about 3.6 percent of that of the telephone industry.

Many users relied on private networks not based on their own facilities, but instead on the leased private lines acquired from telephone companies. However, with the breakup of the Bell System and FCC realignment of industry costs, leased line private networks have become increasingly costly and unreliable. In particular, users have experienced considerable difficulties in recent years with the quality and availability of private lines from AT&T for growth.

As a result, Fortune 500 sized firms are now openly assessing the feasibility of providing their own ISDN facilities

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using T1 carrier circuits obtained from AT&T's competitors, satellite transponders, or excess capacity of other users' internal networks. These systems can operate at 1.54 megabits per second and are ideal for transmission of internal data traffic, particularly of a proprietary nature.

A more recent phenomenon has been the emergence of regional carriers' carrier fiber optic networks. Firms such as LDX Net, Electra Communications Corp, RCI Corp., Fibertrak, and LightNet plan to construct individual networks over many regions of the country in the next few years. Several of these firms plan to interconnect to form a nationwide system called the National Telecommunications Network (NTN). The construction plans of these companies are ambitious. For instance, Fibertrak plans to build an 8,000 mile route that will stretch from the East Coast to the West Coast. Current NTN member companies plan to add an additional 5,500 miles by mid-1986 to their current (operational) systems.

Satellite systems and teleport operators represent another area of volatile supply possibilities. For instance, in 1985 an additional 10 domestic satellites will be launched, which will add considerable (surplus) capacity to the 21 domsats already operating. As a direct result, transponder prices are dropping precipitously. Recently, transponders have been selling in the range of $3.5 to $4.0 million, which contrasts sharply with the $13 million price commanded as recently as 1981. Combined with lower earth station costs, which now range from $6,000

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to $10,000, users are finding that installing a satellite drop at each corporate location can be much cheaper than leasing private lines to serve branch offices. In many cases, teleports provide further economies in more densely populated regions because of shared ground costs and administrative services.

5. Prognosis

By the end of this decade, the current telecommunications marketplace will be made up of select "tiers." As indicated earlier, the central sector will be made up of principally fully integrated, end-to-end suppliers which primarily employ their own facilities to offer users a complete "package" of services. Among the firms most like to be major players in this sector are AT&T, the seven Bell Regional Holding Companies, MCI, GTE, and possibly SBS, United, and Continental. The former Bell System entities will still dominate even this conglomeration of giants, although different leaders will emerge depending on geographic, service, and technological factors. (As noted in the following subsection, the RHCs are likely to be released from most MFJ restrictions by 1990.)

Beyond this central core, there will be equipment and carriers' carrier tiers in which other firms may hold intrinsic advantages. For instance, the fiber optic networks will provide strong competition to AT&T in the carriers' carrier sector, while Northern Telecom and IBM/Rolm will be similarly successful in the network equipment and large PBX area.

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In this oligopolistic market structure, there will be many opportunities for firms to apply their organizational advantages of large scale production and vertical integration. The various tiers are more likely to exhibit price leadership market dynamics than those dictated by purely competitive forces. Many of the problems of concentrated supply, which were characteristic of the industry in the past, will remain, albeit at much reduced levels. However, in each of the supply tiers, there may be problems of discrimination, cross subsidy, and access to technical information. In submarkets, particularly those of limited population and traffic density, supply will retain many monopolistic attributes.

Given the as yet unforeseeable advent of strong fully competitive market forces in telecommunications supply, it may be necessary to retain a degree of governmental oversight beyond this decade. Structural algorithms may prove particularly attractive in the central core supply area, where bottleneck conditions are likely to remain most acute. In these areas, local exchange basic service supply bottlenecks will remain and provide the most attractive area for application of structural separation. It may be as late as the end of the 1990s before these areas can be removed from governmental oversight or monitoring (e.g., to the degree that equipment markets have been in the context of the FCC's Computer II decisions).

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B. Governmental Policy

1. FCC Initiatives

There is little doubt that actions of the Federal Communications Commission (FCC) and the courts have set the stage for industry evolution through the rest of this decade. Of course, the FCC's Computer II decision permitted AT&T to escape from the confines of the Department of Justice's 1956 consent decree and enter nonregulated markets. Thus, the Commission permitted what was the world's largest corporation to make full use of its imposing research and manufacturing capabilities in the allied computer and data processing industries.

As a result of the FCC's actions, on the domestic scene many argued that AT&T could now realize the economies of common production, after a 25 year governmentally imposed hiatus, that had long been available to its growing domestic and foreign competition. At this time, from an international trade perspective, the company also determined that it would rejoin its peers in full competition in the integrated interdependent world economy. Of course, AT&T had been largely absent as a major "player" in overseas markets since the 1920s. Here again, removal of governmental constraints could permit economies, open product markets, and offer opportunities that will drive AT&T's internal strategy for the foreseeable future.

Through deregulation, the Computer II and related decisions also opened the terminal equipment and enhanced services

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markets to the full effects of competition. The FCC simultaneously prevented market chilling cross subsidies from carriers' monopoly markets by virtue of separate subsidiary requirements. Most of the FCC's attention has been focused on "dominant" carriers, and, indeed, new entrants have been largely deregulated from both a services and facilities perspective. Moreover, the Commission has been going about the task of eliminating many contrary policy initiatives, at least at the state level, through the device of preemption. By calling into play its federal mandate, the FCC has circumscribed state regulatory authorities in such areas as customer premises equipment deregulation and capital recovery.

2. Congress and the Courts

During this period, the Congress has effectively acquiesced in the FCC's actions by failing to pass significant legislative initiatives. Since 1976, there have been continual attempts to set national policy in the context of revision of the Communications Act of 1934 intended to reflect current telecommunications conditions. In addition, the Congress has from time-to-time been involved in legislative proposals that would reverse FCC policy directly. The 98th Congress' attempts to pass access charge legislation provides an important example in this area.

However, all of these efforts have failed to result in passage of major of domestic telephone legislation. While the public record and airing of issues and positions have been taken

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into account by other policy makers, most notably the FCC and the courts, Congress has had no direct influence on industry evolution in the sense that it has not promulgated guidelines for growth and development. In short, Congressional failure to revise fully the Communications Act (in accordance with its designs for telecommunications policy in the 1980s) has effectively permitted the FCC to "rewrite" the Act through administrative decisions over the course of the last decade.

The courts meanwhile have supported the Commission's new policy thrusts by consistently upholding its deregulatory, preemption, and other major decisions. However, unlike the Congress, the courts have also played a direct role in the policy formulation process. Of course, the Court of Appeals' Execunet decisions in the late 1970s are of major importance. These decisions had the result of converting the FCC's prior policy of limited competition to a new approach of full entry in all interstate (switched and unswitched) services. The impact of the AT&T divestiture and administration of the Modification of Final Judgment (MFJ) by Judge Greene has furnished even greater evidence of the courts' role in helping to shape the evolution of the communications industry.

It is notable, however, that the MFJ called for spinning off of simply the "bottleneck" exchange and short haul facilities (and terminal equipment) of the Bell Operating Companies (BOCs), rather than divestiture of these companies as integrated operations. Thus, it resulted in division of the industry along

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market lines, with huge variances in the level of competition between the equipment, long distance, and local communications market segments.

Had the MFJ instead required divestiture of the BOCs intact, AT&T, GTE, and the larger independent telephone companies would already be competing today with the seven Bell regional holding companies (RHCs) on an "end-to-end" or integrated basis in network and other domestic services markets. In effect, the industry would have been transformed from a monopoly (Bell System) supply status to one of oligopoly among a multiplicity of major service providers.

Moreover, the RHCs would have constituted more imposing international competitors and presented very appealing prospects in terms of United States' trade expansion (which is an aspect of the MFJ that is under current Congressional review). Finally, the impetus for diversification of the BOCs would have been quite different. In particular, it is unlikely that the rampant acquisition movement of the regional companies immediately after divestiture would have occurred to a similar degree had the BOCs been divested intact. In contrast, when faced with the prospects of slow growth of bottleneck exchange services and erosion of their revenue base, these companies apparently had strong incentives to secure footholds in as many other markets as possible in the short run, at least while their underlying exchange business was still in sound financial health.

3. Prognosis

In recent months, the FCC and Judge Greene have provided conflicting signals concerning the general direction of government involvement in the future course of industry development. Generally, the FCC has continued on its course of regulatory retrenchment. For instance, it has removed or is considering removing many of the initial restrictions set forth by its historic regulatory mission and even the more limited role it envisioned in the context of its Computer II decision.

As noted, the Commission has effectively "set free" all nondominant carriers from regulatory oversight as well as the equipment and enhanced services suppliers. It has also removed application of full (AT&T) separation restrictions from the divested BOCs and GTE. The FCC is currently considering the long run deregulation of AT&T and relaxing restrictions on the "mixing" of basic regulated offerings and other services, including code and protocol conversion and network offerings.

Prospectively, by the early 1990s, the FCC's role may be quite narrow. Traditional tariff regulation and administration of an aggregate rate of return constraint could be largely abandoned for all intercity carriers, including AT&T. Separation requirements between regulated and unregulated activities are also likely to be rescinded in most areas, excepting instances where there is demonstrated abuse of market power. The most important pervasive requirements that should remain will call for equal access to major carrier facilities and services by

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both affiliated and unaffiliated entities and for interconnection between all of the larger intercity suppliers. The FCC will also still be concerned with its traditional standards and spectrum allocation functions, and will act as an "enforcement agent" to insure industry readiness in the defense and emergency preparedness areas.

Of course, Judge Greene has indicated his intent to maintain continued restrictions on the Bell Operating Companies and to monitor closely their full compliance to the MFJ's equal access provisions and provision of universal telephone service. This position of the court grew out of the extensive diversification efforts of the BOCs in 1984. However, the court will begin lessening its intense monitoring and oversight activities over the course of the next few years as equal access becomes a reality and more effective intrastate competition emerges.

By 1987, AT&T will have re-entered the local exchange area to provide direct connections to all of its largest customers and formidable competition to the BOCs. Moreover, satellite and intercity fiber optics networks will be in place to provide inexpensive means of completing private networks for even mid-sized firms, without the necessity of developing full in-house communications capabilities. These systems will compete with BOCs for intrastate traffic and also provide, through joint agreements, an effective means for the BOCs to fill out their facilities networks. Application of other bypass systems will be commonplace.

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Faced with these realities, and intense pressure from the RHCs for a "level playing field" on which to compete, the court will remove the MFJ's prohibitions against the BOCs offering interLATA communications. Some restrictions, such as separate subsidiaries, will still apply for a time. However, by the 1990s many of these, as currently constituted, will also be lifted. (The local exchange bottleneck service area is likely to be separated as a "monopoly separate subsidiary" and will constitute a major exception.)

Manufacturing restrictions will also be removed at that time, although some constraints will remain in regard to furnishing information programming or content. In the latter area, structural separation, rather than an outright ban, will also apply. As a result of these changes, the BOCs will at last be practically free to compete head-to-head with AT&T and the other survivors of the present "competitive era."

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CHART III-1

Bell Regional Holding Companies:

Assets, Revenues, Net Incomes, Employees

Company	Assets* $ bil.	Assets* Rank ***	Rev's* $ bil.	Rev's* Rank ***	Net Inc. $ bil.	Net Inc. Rank ***	Emply's ** 000s	Emply's ** Rank ***
Ameritech	16.3	4	8.9	3	1.0	3	79.0	5
Bell Atlantic	16.3	3	8.7	4	1.1	2	80.0	4
BellSouth	20.8	1	10.5	1	1.4	1	99.1	1
NYNEX	17.4	2	10.0	2	1.0	4	98.2	2
Pacific Telesis	16.2	5	7.9	5	1.0	5	82.0	3
Southwest-ern Bell	15.5	6	7.9	6	.9	6	74.7	7
U S WEST	15.1	7	7.6	7	.9	7	75.0	6

* Data as of June 30, 1983, except where otherwise indicated.
** Estimated January 1, 1984.
*** Rankings are based on unrounded numbers.

Source: November 8, 1983 AT&T Information Statement and Prospectus, pp. 6-13, except for data secured from state rate cases. Bethesda Research Institute estimates, (c), 1984.

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CHART III-2

Bell Regional Holding Companies:
ESS Lines, Digital Lines, Fiber Optics Systems

	ESS Lines	Digital Lines	Fiber Optics
Ameritech	60%	NA%	NA Mi.
Bell Atlantic	55	11	206
BellSouth	57	15	3,710
NYNEX	42	9	13,800
Pacific Telesis	51	20	4,534
Southwestern Bell	70	8	2,000
U S WEST	58	13	115

Source: November 8, 1983 AT&T Information Statement and Prospectus, pp. 6-13, except for data secured from state rate cases. Bethesda Research Institute estimates, (c), 1984.16

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